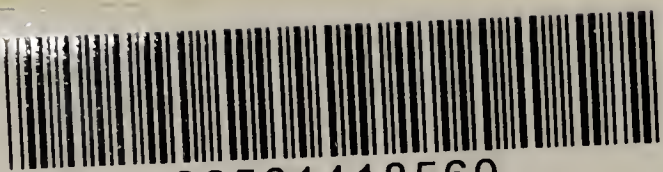


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The

Twenty Second

Annual Report

of

The Medical Officer of Health



1951

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Town Hall,
NAIROBI.
22nd July, 1952.

The Worshipful the Mayor,
Alderman and Councillors,
City Council of Nairobi.

Your Worship, Aldermen and Councillors,

I have the honour to present to you my Annual Report on the sanitary circumstances, sanitary administration, vital statistics and the state of the public health of the City of Nairobi for the year 1951, as required by the "Municipalities Ordinance, 1948" "The Medical Officers of Health Rules Section 2 (12.d.)"

A. T. G. THOMAS,
M.D., B.S., D.P.H.,
Medical Officer of Health.

PUBLIC HEALTH COMMITTEE

DECEMBER 1951

Councillor N. F. Harris Chairman.

The Deputy Mayor, Alderman J. R. Gregory,
O.B.E. Deputy Chairman.

H.W. The Mayor, Alderman J. R. Maxwell.

Alderman Allah Ditta Qureshi, O.B.E.

Alderman Udall, C.B.E.

Councillor Bakewell.

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„ Mrs. Khuda Bux.

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„ Pandit.

„ Powell, F.R.C.S.

„ Mrs. Rayner.

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Section 1

INTRODUCTION

To most laymen the Annual Reports of Medical Officers of Health must make appallingly dull reading. To start with, a great deal of the information given seems to be of little direct interest or personal importance. Secondly, the interpretation of many of the statistics is often obscure to anyone who is not actually statistically minded. Finally, the very form of the report is not conducive to bringing before the eye of the reader a realistic picture of the circumstances. This is because such documents have become very much conventionalised and in England, at any rate, standardized under certain specific prescribed headings.

Of course, the information contained in them is really necessary, because it is by the collation of such figures that trends in the matter of health and longevity can be demonstrated, and by no other means. Still, the fact remains that it is very difficult to express the activities, interests, and problems of a public health department in a report of this kind. On its preventive side, a department such as this comes, so to speak, into the front line of battle when an epidemic threatens or prevails, but in between times there are many months of routine patrol and sentry-go.

The activity of growth of the City, of its commerce and building development, continued during 1951 with undiminished vigour, and once again no outstanding or serious epidemic or health problem arose to cause public concern. There were, of course, some items in the year's health figures which must continue to cause a grave concern on the long term policy, and of these the problem of Tuberculosis looms larger and larger. This will be dealt with in detail later in the report.

Further encouraging progress was made during the year in ridding the city of some of its slums and, tedious though the procedure is with its long drawn-out and complicated legal aspects, the results of it are becoming increasingly evident in spacious and attractive buildings which are adding new dignity to streets which, a few years ago, were dreary corrugated iron slums. Once the old buildings are removed and the way clear, European and Asian enterprise is quick to make use of the sites. A fair example of such progress is in Abdulla Street, where, out of about 21 plots, seven have been cleared by demolition and on five of these, new buildings are in course of construction. The remaining property is in good enough condition to remain for some time.

On the other hand, two abominable junk businesses persist on prominent sites in Racecourse Road, although they have been the object of persistent attempts to secure their removal over a period of more than five years. In addition to complex legal problems arising from their tenure of the land, the ultimate problem arises as to where they are to go if displaced. After prolonged negotiation, sites in the industrial area were actually obtained for offer to the traders, but conditions attached to the grant by the Department of Lands made it impossible for negotiations to be continued. Efforts in this direction are being sustained.

1951 will undoubtedly go down in history as a year of exceptional rainfall. In the earlier months, much damage was done by floods and great anxiety was felt that the enormous quantities of water all over the city will give rise to serious mosquito breeding and consequent malaria. Oddly enough, this foreboding proved to be unfounded. Possibly the very intensity of the rain kept collections of water on the move and discouraged

breeding. Possibly also the temperature which was rather low had a similar effect. Finally of course during the whole period, the anti-malarial mechanism of the Infectious Diseases Control Department worked at full pressure dealing especially with larval control. The end result at any rate was gratifying and the malaria figures did not show any alarming increase.

A further problem which was thrown into very strong relief by the extensive rainfall was the plight of many householders whose houses were served by septic tanks which could not be emptied owing to the risk of heavy vehicles bogging on private roads of access. To make matters worse many septic tanks tended to fill up much more quickly during the rain owing to faulty construction. The moral of all this has no doubt been appreciated by many householders. It is that they should think carefully before they oppose the making up of their private streets under the appropriate Ordinance, realising that quite apart from giving access to their plots for personal use, these roads must carry essential services at a time when they may be most needed.

Another important feature of the work of the Public Health Department during the year was the preliminary talks regarding the possibility of the department taking over the Government dispensary and ambulance services operating in the City. Government have recognised for some time that the demands of the growing African population have long outstripped the resources of the present dispensary system, and that an improvement in their quality as well as their numerical capacity is essential. Further, the proposal is being put forward that personal services such as a dispensary system should be the concern of the local authority rather than directly under Government. From this department's point of view, the great advantage which could accrue from our taking over of the services would be that we could establish health centres where, for the first time, we could give some sort of preventive training to the whole family and not simply to mothers and children as at present in our welfare centres. This is simplified by the new scheme as at present envisaged, that the large existing single dispensary is to be supplemented by five local units in the African locations and the work divided amongst them. These units could readily be associated with the existing welfare centres forming the beginnings of a health centre scheme. This is in accordance with the policy that we should, in this country, devote our maximum possible effort to preventive medicine, since the curative services are costly and limited. In spite of the advantages offered, the whole scheme is one which will need to be approached with very considerable caution. When it is borne in mind that attendances in the present services are of the order of 300,000 a year, an improved and more accessible service might well double the figure in a year, and the financial implications are formidable. Once again, it is a pleasure to acknowledge the full co-operation and smooth working which has characterised our relations with Medical Headquarters and to thank my staff, colleagues, and members of the Council for their help.

GENERAL PROGRESS

Propaganda

During the year the usual propaganda media were used to encourage health education amongst all races. Slides were exhibited at cinemas, posters distributed and lectures and cinema shows given in the African Locations. An unobtrusive but nevertheless extremely important propaganda measure is the individual family health education given by European

Health Visitors at their visits, but these of course deal almost entirely with the women and children. If and when the dispensary service is developed by the Council, the establishment of health centres will give us access to the family as a whole and it may be anticipated that our teaching may be still more effective.

Provision was made and approved in the Estimates for a new form of propaganda work which, when developed, should prove to be very effective. Hitherto, one of our drawbacks has been that especially amongst the women, Swahili is not fully understood in place of the tribal dialect. Our practice at present is to give health education by the showing of health film strips, which are really lantern slides. The new system is to work a sound recording apparatus in conjunction with these so that an educational film strip can be accompanied by a lecture in a local dialect such as Kikuyu or Luo. One especial advantage of this is that we can make our own recordings and films, thus giving the teaching an essentially topical interest.

Towards the end of the year weekly broadcasts were started on health subjects for the benefit of the English speaking public and it is planned that these should continue.

Lady Grigg African Maternity Hospital

Excellent progress was made towards bringing this handsome building to completion, and it is anticipated that it will be fit for occupation early in the new year. It has been in planning and under discussion for nearly six years, but the resulting building is most satisfactory. Its effect will be to increase the number of African cases dealt with in much better surroundings and amenities and also, and very importantly, to facilitate the training of African midwives destined to practise in all parts of the country. The existing maternity hospital is to be re-designed and used as a hostel for the trainees. It will now be possible for them to live free from overcrowding and in generally much more comfortable circumstances. Much difficulty was experienced in finding a suitable candidate for the post of Medical Officer in charge of the hospital, and we still are without a permanent officer for this important post.

Staff Clinic

This busy clinic continued to justify itself amply during the year and has undoubtedly contributed to the diminution of absenteeism and sickness amongst members of the staff, particularly Africans. It will no doubt be desirable to continue this clinic in the future, but if the Council takes over the dispensary services, it should be possible for the staff clinic to be merged into this bigger scheme.

Inoculation Centre

The year showed no diminution in the number of persons attending for inoculations and vaccinations. As usual, large numbers of people, especially Europeans, rushed to the centre in a panic because they had allowed their yellow fever and vaccination certificates to grow out of date and wanted to travel in a hurry. Many of them had to postpone

their journeys and suffer much inconvenience because yellow fever certificates are not valid under ten days and vaccination certificates under fourteen. Possibly, in the course of time the public will appreciate the wisdom of keeping their certificates up to date. In view of the large numbers of Africans who attended for T.A.B. inoculations, an investigation was made into their reasons for so doing. The results were so interesting that they were made the subject of an article in the East African Medical Journal, which is quoted in full at a later point in this report.

African Maternity and Child Welfare

The year saw steady progress, although a new clinic promised by the Railway at Maisha has been slow in taking shape. The policy of training high-grade African women to share in the work is going smoothly, and by so doing, it should be possible to keep pace for some time with the growing population without increasing the European staff to any great extent, although a European Supervisor of African Midwives is becoming an increasing need. In one particularly difficult area, Pumwani, where the population is of a transient character and is very badly housed, the home-visiting by the Health Visitor had to be restricted since it was not felt that her time was being entirely effectively spent. The situation is being watched and when these services can be profitably renewed, this will be done. Meanwhile, there is ample scope for such services in the new areas growing up on the outskirts of the locations where teaching is much better received.

Asian Maternity and Child Welfare

Prominent amongst the year's activities was a refresher course for Asian midwives which was very well attended. It is very encouraging to see that the midwives are anxious to improve their experience and efficiency in this way. Although by-laws are being drafted to deal with certain irregularities, it is much more preferable to obtain co-operation by friendly discussion than by this means.

Municipal Market — Stewart Street

Considerable progress has been made in the continuing policy of re-organising and cleaning up not only the actual facilities of the market but the disorderly and untidy practices of many of the tenants. The capacity of the market is being improved by the turning of the two balconies into blocks of five stalls each and new and attractive stalls in the centre court to replace the old untidy rat-ridden wooden structures. Tenants are more and more co-operating and redecorating their own stalls, and further redecoration of Council's part is being planned. Perhaps the most significant index of progress on the market is the very great increase in fees collected as market dues, payment of which has been in the past evaded. The reorganization of the wholesale market has, however, revealed that the space available for it is quite inadequate, and it will be a step in the right direction when this can be turned into an African retail market and the whole untidy proceeding of wholesaling be removed to premises specially adapted for it in a more suitable part of the City.

Legislation

The criticism has sometimes been made that we are over-provided with by-laws, and under-provided with the resources to insist upon their being observed. This may be to some extent true, but we could not exert any control at all if we had not the legal authority to do so, whereas, if it has been established, we can at any time build up the machinery to enforce the existing by-laws. During the year the Nursing Home By-laws came into force. The Milk and Dairies (Amendment) By-laws were put forward and the question of the control of Day Nurseries and Nursery Schools raised. It appears that enabling powers for by-laws to be made to control these did not exist in the Municipalities Ordinance and it was therefore necessary to ask for an extension of the Ordinance through the Commissioner for Local Government. It is hoped that no difficulty will be placed in the way of these by-laws. As matters stand, anyone, however unsuitable, can set up a day nursery in any premises and the extent to which abuse could occur can be well appreciated.

Finally, amendments have been requested to the Notification of Births By-laws, since it has been found that there is a tendency to evade responsibility in the notification of births by the Asian community. The weakness lies in the fact that the duty of notification is laid alternatively upon the midwife or the husband and each can leave the duty to the other.

Food Handling

Steady pressure was maintained throughout the year to encourage clean food handling. A special film was exhibited entitled "Another Case of Food Poisoning" and an invitation sent to firms dealing with food.

Another advance was the presentation of a Cup by Sir Richard Woodley for competition amongst dairymen in the City, the award being made to the firm which showed the highest standard after repeated inspections. Competitions such as this give a positive incentive towards progress, which is better than the negative one of prosecution for carelessness.

In view of the repeated complaints received of foreign matter appearing in mineral waters, an amendment was made to the Aerated Water By-laws forbidding the use of coloured or opaque bottles from a specified date next year. This means that both the producer-retailer and consumer can see any impurity in the product at a glance.

Cleansing Services

The year saw a further increase in our transport fleet, but the improvement which had been hoped for was somewhat impaired, firstly by the loss of three vehicles owing to various accidents, and secondly by the rains, which of course held up the services owing to the difficulties experienced at the tip itself and the bad condition of access roads. Nevertheless, complaints were on the whole diminished.

The composting scheme at the tip showed excellent progress and it is confidently anticipated that in the end we will turn the whole of the City's refuse into valuable and nutritious material.

Demolition of Buildings

As an indication of the tempo of operations to secure the removal of insanitary and unauthorised structures, the figures given below are interesting :—

	Dealt with under Public Health Ordinance	Dealt with by Building Department
1951	53	334
1946	79	No record
1947	80	”
1948	154	”
1949	145	274
1950	102	287
	<hr/> 613 <hr/>	<hr/> 895 <hr/>

Allowance must be made, of course, in studying the above figures for the fact that they include all types of structure, from the decaying tenement house to the small unauthorised hut. Nevertheless, the figures are very satisfactory. It will be appreciated that in view of the coverage, both of vacant plots and of plots left vacant by demolitions, by new buildings, the problem of unsound and unauthorised structures is likely to diminish as time advances.

Another problem which has seriously impaired the amenities of the City for a long time has been the accumulations of junk which litter plots and road reserves. For a long time there was some uncertainty as to our legal position in this matter, since the removal of ancient motor bodies and parts, which often constituted the junk, might, it was felt, be followed by extravagant claims from their alleged owners. However, it was decided to take a firm course and these anticipations have proved to be unfounded. During 1951 alone, 1,232 tons were removed. Here again, it is not expected that the problem will occur to the same extent since most of the sources of junk, i.e. the post-war disposals organisations, have now almost entirely exhausted their stocks.

Section 2

METEOROLOGY

SOME METEOROLOGICAL DETAILS — EASTLEIGH AERODROME 1951

(From the E.A. Meteorological Department)

1951	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
Mean Maximum	82.8	82.9	80.6	75.9	73.9	72.6	72.6	70.4	79.4	77.4	76.5	75.7
Mean Minimum	55.3	57.2	59.0	59.5	58.8	56.4	54.0	54.3	55.6	58.9	59.7	59.1
Mean	69.1	70.1	69.8	67.7	66.3	64.5	63.3	62.3	67.5	68.1	68.1	67.4
RAINFALL (inches)	0.23	0.24	5.40	18.36	9.87	6.32	1.05	0.60	0.39	4.87	5.14	7.61
DAYS OF RAIN	2	3	9	26	22	11	7	6	3	16	16	20
AVERAGE RAINFALL OVER 36 YEARS	1.46	1.93	5.05	7.95	4.97	1.70	0.57	0.97	0.90	2.17	3.92	2.74
RELATIVE HUMIDITY % (E.A.S.T.)	62	71	85	87	91	86	87	87	81	84	88	88
1430	30	32	43	65	63	59	55	59	41	51	58	59
MEAN ATMOSPHERIC	839.2	839.1	838.8	839.7	840.7	841.6	841.7	841.8	841.3	840.6	840.2	840.1
1430 PRESSURE (mbs.)	835.3	835.3	835.6	836.6	838.4	839.4	839.9	840.0	838.1	837.5	837.0	837.1

SOME FIGURES OF NAIROBI RAINFALL — 1897—1951

Readings taken at Nairobi Railway Station

Average yearly rainfall 1897 — 1950	...	...	35.10 inches.
Average yearly rainfall 1901 — 1925	...	...	37.81 inches.
Average yearly rainfall 1926 — 1950	...	...	32.33 inches.
Total rainfall for 1951	...	...	60.08 inches.

Average Yearly Rainfall 10-Year Periods

1901 to 1910	...	...	37.16 inches.
1911 to 1920	...	...	40.71 inches.
1921 to 1930	...	...	34.90 inches.
1931 to 1940	...	...	31.98 inches.
1941 to 1950	...	...	30.60 inches.

NOTE ON THE CLIMATE OF NAIROBI CITY

The City of Nairobi is situated at an altitude of about 5,500 feet, rather more than 300 miles from the coast, and about 100 miles south of the equator. It is flanked by high ground on the north and west, and by extensive plains to the south and east. The modifying effect of the topography on an otherwise tropical climate is considerable.

The climate displays only relatively minor seasonal variations, but Nairobi's position so far inland results in a large diurnal variation, particularly in temperature and humidity, while its height causes it to be some 13°F cooler than the coast. The result is a climate which does not have the enervating effect generally associated with the tropics.

The hottest months are February and March, and during this period afternoon temperatures rise to 85°F or more, and very occasionally to nearly 90°F, a figure which has never yet been exceeded. The period June to August is invariably one of comparatively low day and night temperatures. The average maximum temperature for June is about 72°F; night-time temperatures are generally about 54°F giving a mean range of 18°F. The lowest minimum recorded is 44°F during an August night in 1933, but temperatures much nearer freezing-point have been experienced in neighbouring valley situations from time to time.

Relative humidity also has a very marked daily range. In the early morning it frequently reaches saturation and may fall to 10% in the middle of the day on clear sunny days in February or March.

Cloud is least during the period December—March when skies are about half-covered in the mornings and less than half-covered in the afternoons. From April onwards cloud amount increases until in August at the height of the S.E. monsoons the sky may be quite overcast all morning, the cloud only breaking in the afternoon. As cloud usually decreases after midday there is about 30% more sunshine in the afternoon than in the morning, and it follows that westerly slopes receive more sunshine than easterly. The following figures for mean hours of sunshine per day illustrate this point very clearly :—

	Hrs.		Hrs.		Hrs.
January	9.8	May	6.2	September	5.7
February	9.5	June	4.7	October	7.4
March	8.5	July	4.2	November	7.1
April	7.2	August	4.1	December	8.4

The significance of these figures is better appreciated when it is remembered that the sun is above the horizon for about 12 hours per day throughout the year.

The figures for average rainfall given in the appendix show a distribution with two peaks, one in March—May (the “long rains”) and the other in October—December (the “short rains”). Late December to mid-March is popularly supposed to be **the** dry season, but there is an appreciable expectancy of rain in this period, a rather greater expectancy in fact than in the cool, dry but cloudy mid-year period.

Rainfall is mainly, although not entirely, in the form of afternoon and evening showers, associated at times with thunderstorms. During the months June to September the S.E. Monsoon may bring a dense cap from which light rain sometimes falls for several hours, mainly during the early morning.

Very heavy rain of the tropical deluge type occurs infrequently; when it does it is invariably associated with the more violent type of thunderstorm. In 1951, a very wet year, falls of as much as 5" in 3 hours were experienced in the Nairobi area during the “long rains”. This is however exceptional, falls exceeding 2" in 24 hours being infrequent.

As is general in East Africa, rainfall means can be very misleading. Since several years of short rainfall may follow one another, means have to be interpreted with some circumspection. Some indication of the range of variation is given by the following extreme falls :—

Highest fall recorded in Nairobi 61.80" in 1930.

Lowest fall recorded in Nairobi 19.13" in 1943.

It is apposite to note at this juncture that the mean annual evaporation from a free water surface in Nairobi is some 36", i.e. a figure comparable with the mean rainfall.

High winds are not common in Nairobi, but during February and March moderately strong east or north-easterly winds prevail, which, combined with very low humidities and high temperatures makes the few weeks before the rains the most trying of the year.

COMPARATIVE FIGURES, 1950

(Later figures not available)

	Overall	European	Asian	African	10 English Towns	England
NAIROBI						
Estimated population	136,500	14,500	52,000	70,000	129,533	—
Birth Rate	36	19.7	55.6	25.6	17.9	16.7
Death Rate	10.7	8.7	7.0	14.0	12.6	11.7
Infant Mortality Rate	97.2	39	57.7	169.5	40.2	32.0
T.B. Death Rate (Pulmonary) /10,000	11.6	1.4	1	27	6.0	4.5
KRUGERSDORP						
Estimated population	79,040	25,800	Non-European	African		
Birth Rate	21.1	31.5	2,300	50,900		
Death Rate	14.1	12.4	46.6	12.6		
Infant Mortality Rate	153.8	56.6	12.1	14.9		
T.B. Death Rate (Pulmonary) /10,000	13.4	1.5	90.7	261.1		
			5.9	19.8		
BLOEMFONTEIN (No Asians)						
Estimated population	72,400	32,200	40,200			
Birth Rate	29.12	23.04	33.98			
Death Rate	14.72	7.14	20.80			
Infant Mortality Rate	10.9	2.2	17.9			
T.B. Death Rate (Pulmonary) /10,000	..	47.17	168.37			
SALISBURY						
Estimated population	91,253	24,000	Non-European	African		
Birth Rate	—	29.33	1,960	65,293		
Death Rate	—	6.88	77.04	—		
Infant Mortality Rate	—	42.6	7.65	—		
T.B. Death Rate (Pulmonary) /10,000	11.9	4.1	26.5	24.0		
PRETORIA						
Estimated population	242,000	132,000	Non-European	African		
Birth Rate	31.4	25.53	9,700	100,300		
Death Rate	9.97	6.80	45.12	23.56		
Infant Mortality Rate	98.2	32.34	13.2	10.71		
T.B. Death Rate (Pulmonary) /10,000	5.5	2.4	80.35	181.97		
			8.6			
CAPE TOWN						
Estimated population	402,850	194,050	183,130	25,670		
Birth Rate	33.18	19.23	42.92	32.15		
Death Rate	13.79	9.10	13.6	21.25		
Infant Mortality Rate	88.37	29.29	86.7	218.71		
T.B. Death Rate (Pulmonary) /10,000	26.7	3.5	25.5	52.3		
AVERAGE FOUR SOUTH AFRICAN TOWNS (Salisbury omitted)						
Estimated population	199,072	96,000	49,270	54,300		
Birth Rate	28.7	27.5	52.9	25.6		
Death Rate	13.2	8.7	12.2	16.9		
Infant Mortality Rate	116.52	41.4	73.2	207.52		
T.B. Death Rate (Pulmonary) /10,000	..	14.12	2.5	11.4		
				25.1		

Section 3
VITAL STATISTICS
GENERAL

Area of City	...	...	...	...	20,480 acres or 32 sq. miles.
Population (estimate)	...	...	...	...	149,000
Birth Rate (per 1,000 population)	...	...	...	...	36
Still Birth Rate (per 1,000 live and still births)	...	...	...	...	28
Maternal Mortality Rate (per 1,000 live and still births)	...	...	...	...	3
Infant Mortality Rate (deaths under one year per 1,000 live births)	...	...	...	...	100
Death Rate (corrected; per 1,000 population)	...	...	...	...	12.9

The population figures are an estimate only as it has not yet been found possible to take an accurate census of the population of Nairobi. According to these figures the population has increased by 12,500 or 9% over 1950 (compare with an increase of 6.5% of 1950 over 1949 and 8% of 1949 over 1948). The sex ratio of the races remains the same as in 1950; the European distribution is equal, the Asian in the ratio of 3 males to 2 females, the Africans 4 males to 1 female. The sociological implications of the latter are obvious.

An interesting fact is that the European population of greater Nairobi is 19,000. It is probable that three-quarters, at least, of this population comes into Nairobi during the day, thus making the daytime population approximately 163,000. This very large influx of people has to be catered for in many ways and not least of all by public health services.

The statistical rates for the European population remain more or less constant. The infant mortality rate shows an apparent large increase; the rate of 52 compares unfavourably with 39 in 1950. But all European rates must be accepted with caution. The population is small so that small differences in numbers result in large differences in rates. There were 16 infant deaths and 364 live births in 1951 compared with 11 and 286 respectively in 1950. The maternal mortality rate has decreased from 6.6 to 0 but the figure 6.6 in 1950 represented only 2 deaths.

Outstanding is the decrease in the overall still birth rate from 41 in 1950 to 28 in 1951. The number of Asian and African still births has decreased as is shown:—

	1949	1950	1951
European	6	3	3
Asian	104	112	69
African	96	102	79

Comparative Figures

Generally the health statistics of Nairobi compare very favourably with those of towns in South Africa as can be seen from the above table. It may be argued that, owing to the inaccuracy of population figures in all these towns, such comparisons may not be valid. On the other hand, it

is reasonable to assume that since the errors are common to all these towns, they equate themselves thus rendering a comparison, with mental reservations, not unreasonable.

Causes of Deaths

The principal causes of death are shown :—

(Death rates are per 1,000 of the population).

Disease Group (a)	No. of Deaths	Death Rate (a)	Main cause in group (b)	No. of Deaths	Death Rate (b)
Infectious and Parasitic	394	2.7	Tuberculosis (all forms)	215	1.4
Respiratory	388	2.6	Broncho and unspecific pneumonia	293	1.9
Digestive	240	1.6	Gastro-enteritis (under 2)	132	0.9
Peculiar to 1st year of life	180	1.2	Prematurity	121	0.8
Violence	150	1.0	Road accidents	71	0.5

Total Deaths in Nairobi — 1,935.

The respiratory diseases as a single group take the heaviest toll of life. Of the 293 deaths from broncho-pneumonia and non-specific pneumonia, 234 were African. These deaths show a very definite relationship to climatic changes but, probably more so than with the other races, social circumstances such as clothing, feeding and housing are of importance.

Tuberculosis is dealt with in detail later.

Of the deaths (all races) from gastro-enteritis only 6 were of infants under one month, while 80 were of children between one month and one year. This could be reduced by increased standards of general cleanliness and by education in the bringing up of infants — such work as is now being carried out at the Mother and Child Welfare Clinics.

Figures of the past five years show that prematurity has been the principle cause of death amongst those diseases peculiar to the first year of life. The percentages of the deaths in the group due to prematurity have been

1947	1948	1949	1950	1951
74%	48%	60%	50%	45%

Poor diet, chronic disease and insufficient ante-natal care are the principal causative factors.

TABLE 1

Population Figures 1947 to 1951

(Estimated by East African Statistical Department).

	1947	1948	1949	1950	1951
Europeans	10,500	10,830	12,000	14,500	15,000
Asians	39,000	41,810	50,000	52,000	54,000
Africans	64,000	65,939	66,000	70,000	80,000
TOTALS	113,500	118,579	128,000	136,500	149,000

Nairobi District : European population only — 19,000.

TABLE 2

Summary of Vital Statistics, 1951

	Estimated Population	Deaths	Death Rate per 1000	Live births	Birth Rate per 1000	Infant deaths	Infant Mor- tality rate	Live and Still births	Mater- nal deaths	Rate per 1000 births
Europeans	15,000	148	9.9	364	20.2	16	52	307	—	—
Asians	54,000	437	8.0	3,117	57.7	163	52	3,186	7	2.19
Africans	80,000	1,350	16.8	1,979	24.7	367	180	2,058	7	3.4
TOTALS	149,000	1,935	12.9	5,460	36.7	546	100	5,551	14	2.5

TABLE 3

Number of Births Notified in 1951

	RESIDENTS			NON-RESIDENTS		
	Births	Still-Births	Total	Births	Still-Births	Total
Europeans	304	3	307	223	1	224
Asians	3,117	69	3,186	49	2	51
Africans	1,979	79	2,058	1,004	57	1,061
TOTALS	5,400	151	5,551	1,276	60	1,336

TABLE 4

Birth Rates over the Past Five Years

	1947	1948	1949	1950	1951
Europeans	17.5	24.6	27.2	19.7	20.2
Asians	43.9	53.9	53.1	55.6	57.7
Africans	17.5	23.6	25.8	25.6	24.7

TABLE 5

Infant Deaths, 1951

(Infant Mortality Rate = Infant Deaths per 1,000 Live Births)

	RESIDENTS			Infant Mortality Rate	NON-RESIDENTS		
	Male	Female	Total		Male	Female	Total
Europeans	11	5	16	52	1	—	1
Asians	93	70	163	52	—	—	—
Africans	230	137	367	180	102	81	183
TOTALS	334	212	546	100	103	81	184

TABLE 6

Infant Mortality Rates Over Past Five Years

(Deaths of Infants under one year per 1,000 live births)

(Corrected for Outward Transfer)

	1947	1948	1949	1950	1951
Europeans	64	75	25	39	52
Asians	98	67	57	58	52
Africans	224	187	168	170	180

TABLE 7

Maternal Deaths and Maternal Mortality Rate, 1951

Rate /1000

	Live & Still-births	Maternal Deaths	Births
Europeans	307	—	—
Asians	3,186	7	2.19
Africans	2,058	7	3.4
TOTALS	5,551	14	

TABLE 8

Deaths and Death Rate 1951

(Death rate = No. of deaths per 1000 population)

	RESIDENTS			Death Rate	NON-RESIDENTS		
	Male	Female	Total		Male	Female	Total
Europeans	96	52	148	9.9	8	4	12
Asians	263	174	437	8.0	6	2	8
Africans	872	478	1,350	16.8	438	189	627
TOTALS	1,231	704	1,935	12.9	452	195	647

TABLE 9

Death Rates Over Past Five Years

	1947	1948	1949	1950	1951
Europeans	7.0	10.0	9.8	8.6	9.9
Asians	9.0	8.2	6.6	7.0	8.0
Africans	11.8	12.0	13.8	14.0	16.8

TABLE 10

Summary of the Causes of Death

	Europeans	Asians	Africans	Totals	Percentage of all Deaths in 1951	Percentage of all Deaths in 1950	Death Rate 1951	Death Rate 1950
1. Infectious & Parasitic Diseases ...	9	24	361	394	20.36	10.10	2.6	2.05
2. Cancer and other Tumours	20	5	19	44	2.27	2.0	0.24	0.31
3. Rheumatism, Diseases of Nutrition, etc. ...	6	9	33	48	2.48	2.35	0.32	0.24
4. Diseases of the blood, etc.	—	15	16	31	1.6	1.1	0.10	0.12
5. Chronic Poisoning and Intoxications ...	—	2	4	6	0.31	0.2	0.04	0.03
6. Diseases of the Nervous System ...	11	28	41	80	4.13	5.0	0.53	0.54
7. Diseases of the Circulatory System ...	26	21	8	55	2.84	3.0	0.37	0.32
8. Diseases of the Respiratory System ...	12	73	303	388	20.10	21.6	2.60	2.3
9. Diseases of the Digestive System ...	15	58	167	240	12.4	9.0	1.0	0.97
10. Diseases of the Genito-Urinary System (non-venereal) ...	8	8	9	25	1.3	1.3	0.16	0.14
11. Diseases of Pregnancy, Childbirth, etc. ...	—	7	7	14	0.72	0.5	0.09	0.05
12. Diseases of the Skin ...	—	—	5	5	0.26	0.1	0.03	0.01
13. Diseases of bones and Joints ...	—	—	—	—	—	—	—	—
14. Congenital Malformations	5	3	9	17	0.88	1.0	0.10	0.10
15. Diseases peculiar to the First Year of Life ...	5	81	94	180	9.30	12.5	1.20	1.35
16. Senility, old age ...	3	2	7	12	0.63	0.3	0.86	0.03
17. Death from Violence ...	17	24	109	150	7.7	9.6	1.00	1.04
18. Ill-defined causes ...	11	77	158	246	12.71	10.5	1.6	1.13
Total of all Deaths ...	148	437	1,350	1,935	100.0	100.0	12.9	10.7

TABLE 11

Causes of Infant Deaths

(Under one month)

International

List No.	Cause		Europeans	Asians	Africans	Total
1.	Typhoid	...	—	—	1	1
12.	Infantile tetanus	...	—	—	5	5
24.	Septicaemia	...	—	—	1	1
30.	Congenital Syphilis	...	—	—	8	8
33.	Influenza	...	—	1	—	1
35.	Measles	...	—	—	1	1
100.	Thrombophlebitis	...	—	1	—	1
106.	Bronchitis	...	—	2	—	2
107.	Broncho-pneumonia	...	—	5	11	16
108.	Lobar-Pneumonia	...	—	1	—	1
109.	Pneumonia — undefined	...	—	9	4	13
119.	Gastro-enteritis	...	—	4	2	6
153.	Sclerema Neonatorum	...	—	—	3	3
157.	Congenital heart disease	...	2	—	—	2
157.	Spina Bifida	...	—	—	1	1
157.	Meningocele	...	—	—	2	2
157.	Monster	...	—	—	1	1
157.	Other congenital malformations	...	1	—	1	2
158.	Congenital debility	...	—	4	2	6
158.	Malnutrition	...	—	1	—	1
159.	Prematurity	...	1	53	57	111
160.	Birth Injuries	...	1	3	15	19
161.	Toxaemia of mother	...	—	1	2	3
161.	Rhesus Factor	...	—	1	—	1
161.	Icterus Neonatorum	...	1	1	—	2
161.	Asphyxia Neonatorum atelectasis	...	2	6	5	13
200.	Heart Failure	...	—	2	—	2
200.	Undefined	...	—	—	22	22
Totals		...	8	95	144	247

TABLE 12
Causes of Infant Deaths
 (From one month to one year)

International List No.	Cause	Europeans	Asians	Africans	Total
1.	Typhoid	—	1	—	1
6.	Cerebro Spinal Meningitis	—	—	1	1
9.	Whooping Cough	—	—	4	4
10.	Diphtheria	—	—	1	1
12.	Infantile Tetanus	—	—	1	1
13.	Pulmonary Tuberculosis	—	—	5	5
14.	Tuberculous Meningitis	—	—	2	2
27.	Bacillary Dysentery	1	—	2	3
28.	Cerebral Malaria	—	2	3	5
28.	Malaria	—	—	1	1
30.	Congenital Syphilis	—	1	3	4
64.	Enlarged thymus gland	1	—	—	1
69.	Kwashiokor	—	—	1	1
73.	Anaemia	—	—	4	4
35.	Measles	—	—	3	3
80.	Encephalitis	—	3	—	3
81.	Pneumococcal Meningitis	—	1	2	3
86.	Convulsions	—	1	—	1
86.	Tetany	—	—	1	1
105.	Laryngeal Stridor	—	—	1	1
106.	Bronchitis	—	—	2	2
107.	Broncho-pneumonia	1	9	66	76
108.	Lobar Pneumonia	—	—	1	1
109.	Pneumonia, undefined	—	13	23	36
110.	Pleural effusion	—	—	1	1
110.	Empyema	—	—	1	1
115.	Tonsilitis	—	—	2	2
119.	Gastro-enteritis	2	21	57	80
122.	Intestinal Obstruction	1	1	—	2
125.	Cholaemia	—	1	—	1
157.	Congenital atresia bile duct	1	—	—	1
157.	Congenital heart disease	1	1	—	2
158.	Congenital debility	—	1	3	4
158.	Malnutrition	—	7	2	9
159.	Prematurity	—	3	7	10
160.	Birth Injuries	—	—	1	1
181.	Burns	—	2	1	3
200.	Undefined	—	—	21	21
Total		8	68	223	299

TABLE 13

Causes of Deaths

(Corrected for Outward Transfer)

International Classification.

Group I.—Infectious and Parasitic Diseases

International List No.		Cause	Europeans	Asians	Africans	Total
1.	Typhoid	...	1	1	9	11
6.	Cerebro-spinal Meningitis	...	—	1	5	6
9.	Whooping Cough	...	—	—	26	26
10.	Diphtheria	...	—	—	5	5
12.	Infantile Tetanus	...	—	—	6	6
12.	Tetanus	...	—	—	6	6
13.	Pulmonary Tuberculosis	...	1	5	151	157
14.	Tuberculous Meningitis	...	1	5	30	36
15.	Tuberculous Peritonitis	...	—	—	6	6
15.	Tabes Mesenterica	...	—	—	1	1
16.	Tuberculosis of spine	...	—	—	1	1
19.	Glandular Tuberculosis	...	—	—	4	4
21.	Tuberculous pericarditis	...	—	—	2	2
20.	Tuberculosis of Kidney	...	—	1	—	1
22.	Miliary Tuberculosis	...	—	1	8	9
24.	Pyæmia	...	—	—	1	1
24.	Septicæmia	...	—	—	7	7
27.	Bacillary Dysentery	...	3	—	18	21
28.	Blackwater Fever	...	—	2	1	3
28.	Cerebral Malaria	...	1	3	13	17
28.	Malaria	...	—	1	16	17
29.	Trypanosomiasis	...	—	—	1	1
30.	Congenital Syphilis	...	—	1	11	12
30.	Syphilis	...	—	1	4	5
30.	Aneurysm of aorta	...	—	—	1	1
30.	General Paralysis of the Insane	...	—	—	8	8
33.	Influenza	...	1	1	3	5
35.	Measles	...	—	—	16	16
36.	Poliomyelitis	...	1	1	—	2
44.	Granuloma Caecum	...	—	—	1	1
Totals			9	24	361	394

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Group II.—Cancer and Other Tumours

International

List No.	Cause	Europeans	Asians	Africans	Total
46.	Cancer of the stomach	3	—	4	7
46.	Cancer of the oesophagus	1	—	6	7
46.	Cancer of the liver	2	1	4	7
46.	Cancer of colon	2	—	—	2
46.	Cancer of pancreas	4	1	—	5
47.	Cancer of bronchus	1	—	—	1
47.	Cancer of lung	2	1	—	3
48.	Cancer of cervix	—	—	1	1
49.	Cancer of ovary	1	—	—	1
50.	Cancer of breast	3	—	—	3
52.	Cancer of bladder	—	1	—	1
56.	Papiloma of tonsils	—	—	1	1
56.	Cerebral tumour	1	—	—	1
56.	Adenoma of rectum	—	1	—	1
57.	Pelvic tumour	—	—	2	2
57.	Tumour of face	—	—	1	1
Totals		20	5	19	44

Group III.—Rheumatism, Diseases of Nutrition and of the Endocrine Glands and Vitamin Deficiency Diseases, General Diseases

International

List No.	Cause	Europeans	Asians	Africans	Total
58.	Rheumatic Fever	3	—	—	3
59.	Polyarthrititis	—	—	1	1
61.	Diabetes Mellitus	2	6	3	11
66.	Acute toxæmia	—	1	1	2
67.	Scurvy	—	—	1	1
64.	Enlarged Thymus gland	1	—	—	1
69.	Pellagra	—	1	1	2
69.	Kwashiokor	—	—	26	26
70.	Rickets	—	1	—	1
Totals		6	9	33	48

Group IV.—Diseases of the Blood and Blood-forming Organs

International

List No.	Cause	Europeans	Asians	Africans	Total
72.	Thrombocytopaenia	—	1	—	1
73.	Anaemia	—	13	13	26
74.	Lymphatic Leukaemia	—	1	—	1
75.	Enlarged Spleen	—	—	2	2
75.	Splenomegaly	—	—	1	1
Totals		—	15	16	31

Group V.—Chronic Poisoning and Intoxications

International

List No.	Cause	Europeans	Asians	Africans	Total
77.	Alcoholism	...	—	3	3
79.	Opium Poisoning	...	1	—	1
79.	Soneryl Poisoning	...	1	—	1
79.	Poisoning, unspecified	...	—	1	1
Totals		...	2	4	6

Group VI.—Diseases of the Nervous System

International

List No.	Cause	Europeans	Asians	Africans	Total
80.	Brain Abscess	...	—	1	1
80.	Encephalitis (non-epidemic)	—	4	4	8
81.	Meningitis (non-meningococcal)	...	2	17	19
82.	Progressive muscular atrophy	...	1	—	1
83.	Paraplegia	...	1	—	1
83.	Hemiplegia	...	1	1	6
83.	Cerebral Haemorrhage	...	12	5	23
83.	Cerebral Apoplexy	...	2	—	2
83.	Cerebral Embolism	...	2	2	4
83.	Sub-arachnoid Haemorrhage	—	—	1	1
84.	Insanity	...	—	3	3
84.	Schizophrenia	...	1	3	4
85.	Status Epilepticus	...	—	3	3
86.	Convulsions	...	1	—	1
86.	Tetany	...	—	1	1
87.	Internal Hydrocephalus	...	—	—	1
87.	Cerebral Diplegia	...	1	—	1
Totals		...	11	28	41

Group VII — Diseases of the Circulatory System

International

List No.	Cause	Europeans	Asians	Africans	Total
90.	Pericarditis	...	—	2	2
90.	Hydro-pericardium	...	—	1	1
91.	Acute Endocarditis	...	—	1	1
92.	Mitral Stenosis	...	1	2	4
92.	Valvular heart disease	...	2	1	3
93.	Cardio-vascular degeneration	...	—	—	3
94.	Coronary Thrombosis	...	12	1	26
94.	Coronary Embolism	...	—	—	1
95.	Auricular Fibrillation	...	—	—	1
95.	Ventricular Fibrillation	...	—	—	1
97.	Atheroma	...	1	—	1
97.	Arteriosclerosis	...	1	—	4
99.	Mesenteric Thrombosis	...	—	—	1
101.	Mesenteric Adenitis	...	1	—	1
100.	Thrombo-phlebitis	...	1	—	1
102.	Hypertension	...	2	—	4
Totals		...	26	21	8

Group VIII — Diseases of the Respiratory System

International

List No.	Cause		Europeans	Asians	Africans	Total
105.	Laryngeal Stridor	...	—	—	1	1
105.	Oedema of glottis	...	—	—	1	1
106.	Bronchitis	...	1	3	9	13
107.	Broncho-pneumonia	...	2	17	155	174
108.	Lobar Pneumonia	...	1	3	52	56
109.	Pneumonia, unspecified	...	1	39	79	119
110.	Empyema	...	—	—	1	1
110.	Pleural Effusion	...	—	1	2	3
111.	Pulmonary Embolism	...	4	—	—	4
111.	Pulmonary Oedema	...	—	1	1	2
112.	Asthma	...	3	9	—	12
114.	Lung Abscess	...	—	—	2	2
Totals.		...	12	73	303	388

Group IX — Diseases of the Digestive System

International

List No.	Cause		Europeans	Asians	Africans	Total
115.	Oedema of Glottis	...	—	—	1	1
115.	Streptococcal tonsillitis	...	—	—	5	5
117.	Duodenal Haemorrhage	...	—	1	—	1
117.	Perforated duodenal ulcer	...	2	—	—	2
117.	Gastrectomy	...	1	—	—	1
118.	Haematemesis	...	—	1	4	5
118.	Gastritis	...	—	1	—	1
119.	Gastro-enteritis, (under 2)	...	3	38	91	132
120.	Gastro-enteritis, (over 2)	...	—	3	32	35
121.	Paralytic Ileus	...	1	—	—	1
122.	Intestinal Obstruction	...	2	4	7	13
122.	Strangulated Hernia	...	1	—	—	1
123.	Dilatation of large gut	...	—	—	1	1
124.	Cirrhosis of liver	...	1	6	10	17
125.	Pylephlebitis	...	—	1	—	1
125.	Hepatitis	...	—	—	5	5
125.	Infective hepatitis	...	—	—	2	2
125.	Cholaemia	...	—	1	1	2
125.	Acute yellow atrophy	...	—	1	—	1
126.	Biliary Obstruction	...	1	—	—	1
127.	Cholecystectomy	...	1	—	—	1
129.	Peritonitis	...	2	1	8	11
Totals		...	15	58	167	240

Group X — Diseases of the Genito-Urinary System (Non Venereal)

International

		Europeans	Asians	Africans	Total
130.	Acute Nephritis	...	—	1	1
131.	Chronic Nephritis	...	2	4	8
132.	Nephritis, unspecified	...	2	1	3
132.	Uraemia	...	2	1	8
133.	Hydronephrosis	...	—	—	1
133.	Pyelonephritis	...	1	—	1
135.	Cystitis	...	1	—	1
135.	Acute retention of urine	...	—	2	2
Totals		...	8	9	25

Group XI — Diseases of Pregnancy, Child Birth and the Puerperium

International

List No.	Cause	Europeans	Asians	Africans	Total
141.	Abortion	...	1	1	2
142.	Ruptured Ectopic	...	—	1	1
142.	Extra-uterine Gestation	...	—	1	1
143.	Ante-partum Haemorrhage	...	—	2	2
146.	Post-partum Haemorrhage	...	1	1	2
147.	Pulmonary embolism after delivery	...	1	—	1
148.	Post-partum eclampsia	...	—	1	1
149.	Difficult Labour	...	4	—	4
Totals		...	7	7	14

Group XII — Diseases of the Skin

International

List No.	Cause	Europeans	Asians	Africans	Total
153.	Onychia	...	—	2	2
153.	Sclerema Neonatorum	...	—	3	3
Totals.		...	—	5	5

Group XIII — Congenital Malformations

International

List No.	Cause	Europeans	Asians	Africans	Total
157.	Congenital Heart Disease	...	1	—	4
157.	Spina Bifida	...	—	1	1
157.	Meningocele	...	—	2	2
157.	Monster	...	—	1	1
157.	Infantile cirrhosis	...	1	—	1
157.	Congenital atresia of bile duct	...	—	—	1
157.	Other congenital malformations	...	1	5	7
Totals		...	3	9	17

Group XIV — Diseases Peculiar to the First Year of Life

		Europeans	Asians	Africans	Total	
158.	Congenital Debility	...	—	5	5	10
158.	Malnutrition	...	—	8	2	10
159.	Prematurity	...	1	56	64	121
160.	Birth Injuries	...	1	3	16	20
161.	Icterus Neonatorum	...	1	1	—	2
161.	Asphyxia Neonatorum, Atelectasis	...	2	6	5	13
161.	Toxaemia of mother	...	—	1	2	3
161.	Rhesus Factor	...	—	1	—	1
Totals		...	5	81	94	180

Group XV — Senility, Old Age

162.	Senility	...	3	2	7	12
Totals		...	3	2	7	12

Group XVI — Deaths from Violence

163.	Phenobarbitone Poisoning	...	1	—	—	1
164.	Suicide by firearms	...	3	1	—	4
164.	Suicidal hanging	...	1	—	8	9
164.	Accidental Hanging	...	—	—	2	2
166.	Homicide by firearms	...	—	2	1	3
167.	Homicide by stab wounds	...	—	—	3	3
168.	Clubbed in brawl	...	—	—	1	1
169.	Railway Accidents	...	—	1	4	5
170.	Traffic Accidents (road)	...	8	13	50	71
173.	Aircraft accident	...	2	—	—	2
174.	Accident in quarry	...	—	—	1	1
176.	Accident in Railway Workshop	...	—	—	1	1
177.	Salmonella poisoning	...	—	—	2	2
178.	Carbonmonoxide poisoning	...	—	—	4	4
179.	Accidental oil of chenopodium poisoning	...	—	—	1	1
179.	Accidental paraffin poisoning	...	—	—	1	1
179.	Accidental arsenical poisoning	...	—	—	1	1
179.	Other accidental poisoning	...	—	—	1	1
181.	Accidental burns of fire	...	1	4	14	19
182.	Foreign body in trachea	...	—	—	2	2
183.	Accidental Drowning	...	1	1	11	13
186.	Accidental Falls	...	—	2	—	2
198.	Legal Executions	...	—	—	1	1
Totals		...	17	24	109	150

Group XVIII — Ill Defined Cause of Death.

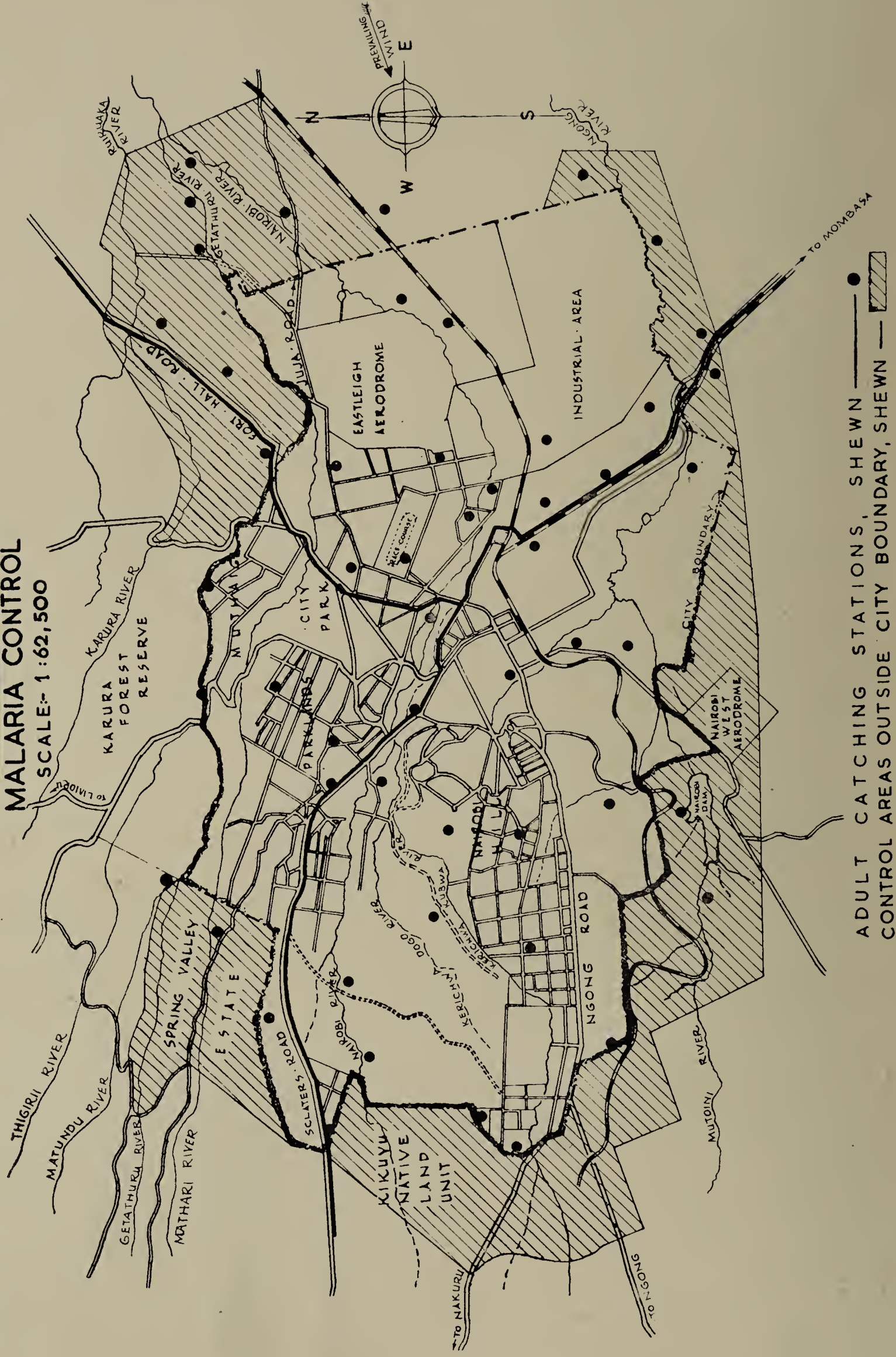
International

List No.	Cause		Europeans	Asians	Africans	Total
200.	Natural Cause or unknown,	...	3	2	136	141
200.	Heart Failure	...	8	41	12	61
200.	Malnutrition (over 1 year)	..	—	1	9	10
200.	Post-operative shock	...	—	3	1	4
	Totals	...	11	77	158	246

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MALARIA CONTROL

SCALE:- 1:62,500



Section 4

NOTIFIABLE DISEASES

TABLE 14

Notifiable Diseases, by Races

Disease	Europeans	Asians	Africans	Totals	Totals for previous years.			
				1951	1950	1949	1948	1947
Anthrax	—	1	15	16	10	25	12	1
Beri-beri	—	—	1	1	—	—	—	1
Blackwater Fever	—	—	2	2	1	3	0	2
Cerebro-spinal Fever	—	2	9	11	2	5	26	12
Chickenpox	261	1	269	531	279	340	16	42
Diphtheria	2	6	8	16	12	12	33	24
Dysentery, Amoebic	8	16	33	57	25	43	19	53
Dysentery, Bacillary	52	31	233	316	198	289	28	122
Erysipelas	—	1	—	1	5	2	—	—
Leprosy	—	2	11	13	19	4	6	4
Malta Fever	1	—	3	4	1	4	4	4
Ophthalmia Neonatorum	—	1	10	11	20	5	—	26
Para-typhoid	—	—	1	1	1	4	—	—
Poliomyelitis	4	3	2	9	16	21	4	29
Puerperal Fever	—	3	2	5	4	4	5	8
Relapsing Fever	—	—	8	8	1	—	3	6
Scarlet Fever	1	—	—	1	2	1	4	3
Smallpox	—	1	—	1	—	—	—	11
Tick Typhus	14	—	1	15	18	27	29	24
Trypanosomiasis	—	—	2	2	—	—	—	1
Tuberculosis	10	19	376	405	387	305	281	202
Typhoid	2	29	42	74	97	130	106	61
TOTALS	355	116	1,029	1,500	1,101	1,221	589	625

The number of diseases notified has increased greatly during the past five years as can be seen from the table above.

This can be accounted for by the undoubted improvement in notification by general practitioners and by the increase in population. It is a mark of increased ability to control and is not, of course, an indication of increased disease.

The same diseases (with the exception of diphtheria in 1948 when there was an epidemic) have headed the incidence list since 1947. Very obviously the greatest menace is tuberculosis, details of which are given elsewhere.

The gradual decrease in typhoid fever notifications is gratifying and can probably be traced, in part at least, to the larger number of Africans being inoculated at the municipal centre (see page 93). The apparent increase in the incidence of amoebic dysentery can be attributed to the improvement in notifications.

Bacillary dysentery and typhoid fever are important in that prevention rests to a very large extent in the hands, literally and metaphorically, of the individual. In the past five years Africans account for 68% of the

notifications of bacillary dysentery and 72% of the notifications of typhoid fever. But the incidence rate gives a more realistic account of the state of affairs :—

Cases / 10,000; 1951

	Bacillary Dysentery	Typhoid
European	34	1
Asian	6	5
African	29	6

The incidence rate is considerable in all races. The measures, then, to be adopted by this department must be along the lines of health education for **all** races. Mass inoculation as a preventive measure in the case of typhoid fever is invaluable and cannot be over-estimated, but it is, in reality, a negative measure and its effective results must not be permitted to belie the true approach to the problem, which is teaching that the prevention of these diseases is almost entirely within the powers of the individual. Soap and water provide the answer.

It has been said that the health of the people in this country depends on the health of the African. By reason of close domestic relationship there is no question of the truth of this statement when applied to gastro-intestinal diseases — specific and non-specific. Every citizen — and especially the housewife — ought to appreciate that she is an **educator** in this respect. It is a social obligation in this colony. If this were realised we would go far to reduce the incidence of gastro-intestinal diseases in Nairobi.

The incidence of other notifiable diseases shows no significant changes and the figures compare favourable with other cities in the United Kingdom and in Africa.

The trouble doctors take in notifying diseases is appreciated by the department and their continued co-operation will be most helpful.

TUBERCULOSIS

Tuberculosis continues to be the greatest single health menace in Nairobi. Of 405 cases notified, 376 were of Africans, 10 of Europeans and 19 of Asians. The figures for Europeans and Asians appear insignificant compared with the figures for the African population; it is well to keep in mind, however, that the health of each race depends on the health of the other races. The rapid increase in the incidence of tuberculosis amongst Africans is not, then, a purely African problem.

Tuberculosis accounted for 36% of all the notifiable diseases amongst Africans in 1951. The attack rate per 10,000 of the African population was 47 and the case mortality rate 53.7% — 15% of all African deaths. But it is probable that these figures are an underestimate since tuberculosis notification amongst Africans is very inaccurate. There is little doubt that many contract the disease in Nairobi and return to the Reserves to die without the disease having been notified. Comparison with South African towns is favourable to Nairobi but notification may be more accurate in them and, since the African there is in many cases more urbanised, the factor mentioned in the last sentence probably operates to a lesser extent, thus favouring the Nairobi figures.

The main factors causing the spread of the disease are

- a) Urbanisation (other causes are really consequent upon this),
- b) Poor diet,
- c) Overcrowding,
- d) Ignorance about causation and individual preventive measures.

Each of these is linked up with various sociological problems. One of these which is possibly of considerable significance, is the practice of paying wages monthly. The whole of a month's pay packet is, without doubt, spent within the first 14 days or so. The result is an even more inadequate diet during the last part of the month. The sale of milk from municipal dairies, for example, is almost halved during the last weeks of any month. It is foolishly begging the question to say that the African should distribute his pay better.

Medical measures would be costly beyond contemplation and without concurrent social improvements, useless.

TABLE 15

Tuberculosis Attack Rate and Death Rates, 1951

Race	Cases	Attack Rate per 10,000 persons	Deaths	Death Rate per 10,000 persons
Europeans	10	6.6	2	1.3
Asians	19	3.5	12	2.0
Africans	376	47.0	202	27.8

TABLE 16

African Tuberculosis Attack and Death Rates per 10,000 Population

Year	Attack Rate	Death Rate
1945	13.0	7.5
1946	14.2	7.9
1947	29.0	11.0
1948	41.0	14.0
1949	40.0	15.0
1950	53.0	27.0
1951	47.0	27.8

Section 5

MALARIA AND AEDES CONTROL**MALARIA CONTROL**

The shortage of staff in 1950 was further aggravated by the resignation of Mr. G. R. C. van Someren in December of that year. He was not replaced. Control was continued over the whole of the City area a large area to the East and South-East, and an additional large area to the West, a total of approximately 50 square miles — this with less supervisory staff and no increase in African Staff. Coupled with the staff shortage, the very heavy rainfall caused not a little anxiety, particularly when adult *Gambiae* catches from the 53 catching stations in May numbered 279 and in June 670, in spite of all-out efforts using High Spreading Malariol and oiled saw-dust. From the following table however it will be seen that of these totals, 240 and 609 adult *gambiae* were taken from the stations to the East, suggesting that had control measures not been continued outside the city boundaries as far as practicable, the situation would have been serious indeed.

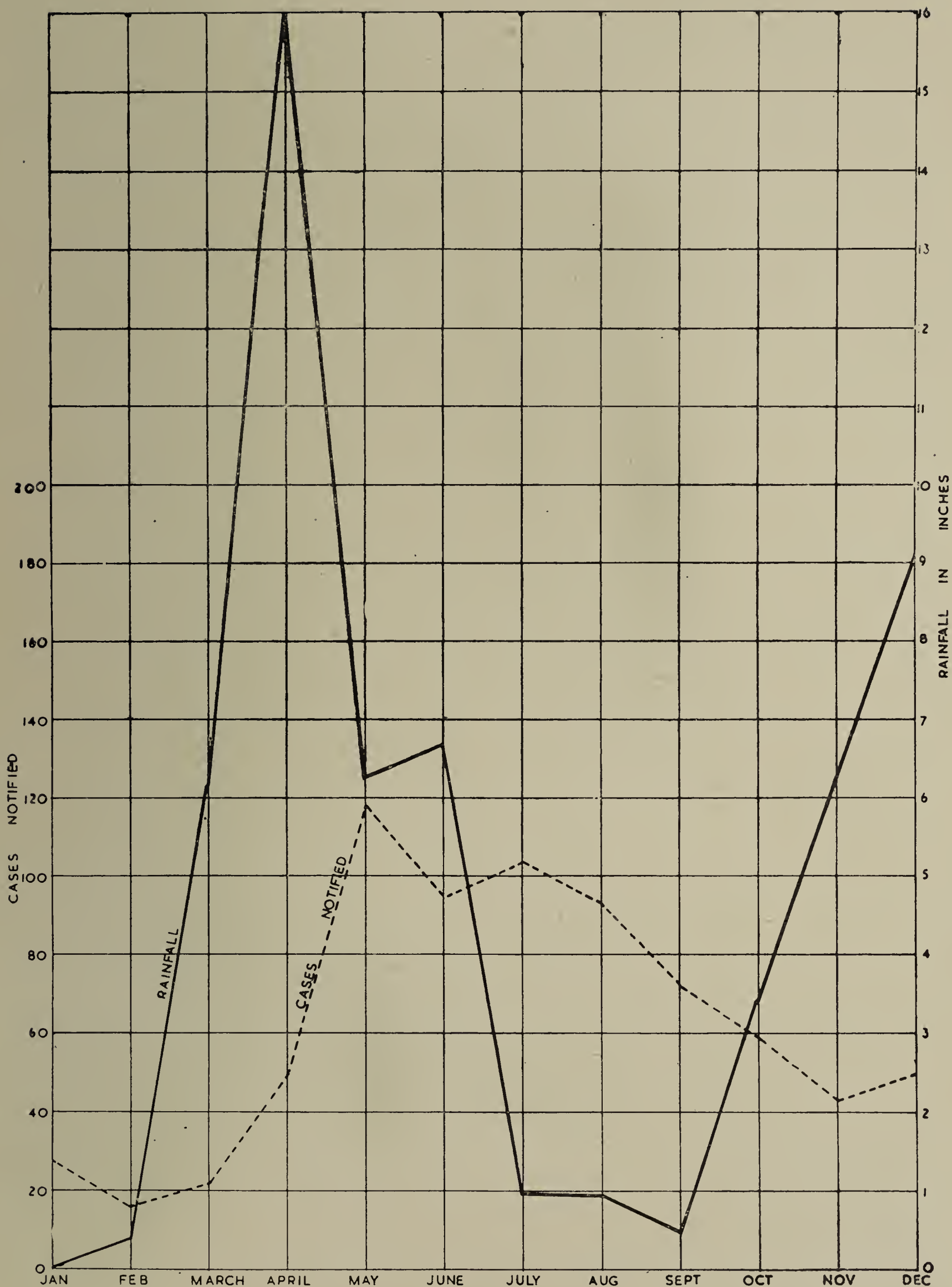
During this period it became obvious that supervision of labour was inadequate and that in consequence costly material was being over-liberally applied. The average oiling boy cannot understand that the application of a small quantity of H. S. Oil will do the job as effectively as much greater applications of other oils and that to apply more would be wasteful. In an attempt to remedy this and to improve control generally, two African head searchers were seconded to assist the European and Asian Inspectors. These two men have proved their worth and have shown themselves capable of taking greater responsibility. It is felt that if these posts be made a permanency, commanding a higher salary, efficiency would be greatly increased and morale improved.

During the year 5,000 pints of Pyrethrum/D.D.T. Insecticide were sold to the public to help combat the mosquito menace. In addition over 1,800 gallons of Anti-Malaria Oil were issued free. In spite of this free service continuous policing was necessary to ensure that breeding was not allowed to take place on flooded plots, the occupiers of which in many cases could not be bothered to call at the Town Hall to collect a bottle of free oil. *Anopheles* larvae were found on 81 occasions in private plots mainly in the Burnbrae and Hill areas.

Dry Season Programme.

Over 2,000 yards of drains were cleared and re-cut during the very short dry season in August and September, mainly to the western areas of the city. This drained off large areas of swamp and was of great assistance during the latter part of the year when heavy rains again fell over a long period. A saving was made in the amount of oil used on this area and it is interesting to note that in June, before this work was commenced, 92 *A. christyi* were caught in one catching station in this area, whilst during the later heavy rains the peak *A. christyi* catch in this station was 10. Correspondingly, *A. gambiae* catches were 12 and 1 respectively.

During this dry season two senior Africans attended a refresher course in Malaria Control with the East African Malaria Unit at Amani in Tanganyika. It is hoped that more of our African Staff may attend future courses.



Variation of Monthly Notifications of Malaria with Rainfall Nairobi, 1951

TABLE 17

A. gambiae Caught in the Fifty-three Collecting Stations

(Per week and per month)

Week	Stations	January	February	March	April	May	June	July	August	September	October	November	December	TOTALS
1	Eastern	—	—	—	—	37	129	65	—	—	—	—	—	231
	Southern & Western	—	—	—	—	2	3	4	—	—	—	—	—	9
	Northern	—	—	—	—	—	3	—	—	—	—	—	—	3
2	Eastern	—	—	—	—	35	129	40	2	3	—	—	—	209
	Southern & Western	—	—	—	—	—	9	4	2	1	—	—	—	16
	Northern	—	—	—	—	1	2	8	1	—	—	—	—	12
3	Eastern	—	—	1	—	52	105	67	2	—	—	—	—	227
	Southern & Western	—	—	—	—	1	12	7	1	—	—	—	—	21
	Northern	—	—	—	—	—	1	3	—	—	—	—	—	4
4	Eastern	—	—	—	1	116	213	37	—	—	—	—	—	367
	Southern & Western	—	—	—	—	35	10	2	—	—	—	—	—	47
	Northern	—	—	—	—	—	5	1	—	—	—	—	—	6
5	Eastern	—	—	—	17	—	33	5	—	—	—	—	—	55
	Southern & Western	—	—	—	—	—	9	1	—	—	—	—	—	10
	Northern	—	—	—	—	—	7	—	—	—	—	—	—	7
T														
O	Eastern	—	—	1	18	240	609	214	4	3	—	—	—	1,089
T	Southern & Western	—	—	—	—	38	43	18	3	1	—	—	—	103
A	Northern	—	—	—	—	1	18	12	1	—	—	—	—	32
L														

MALARIA

Cases notified during the year (contracted in Nairobi) numbered 751 as compared with 613 in 1950, an increase of only 138 cases, despite the fact that *A. gambiae* catches were almost double those of 1950. No doubt the low temperature prevailing throughout the wet season reduced the biting propensity of the *gambiae* population, and curtailed their movement, confining their activities to the area of production, the area of control outside the city boundaries also acting as a buffer or absorption zone.

Distribution of Cases

In June, of 95 cases of malaria notified, 66 occurred in the Eastern Asian/African areas, 14 in the East Central Asian residential area, 2 in the Northern European/Asian area, 2 in the Western European Residential area. For the remaining 11 no addresses were given. Corresponding figures for July were total 104, Eastern area 83, East Central area 12, Northern area 4, and Western area 5.

Types of Malaria

Of the total of 751 cases notified, 236 were diagnosed on clinical symptoms only, blood slides when taken being negative. Of the remainder, sub-tertian was as usual the most prevalent with a total of 475, quartan 16 and benign tertian 24.

TABLE 18

Malaria 1951

Race	Cases	Attack Rate per 10,000	Deaths	Death Rate per 10,000
Europeans	36	2.48	1	0.067
Asians	265	17.77	6	0.4
Africans	450	30.2	30	2.01
Total	751	50.4	37	2.48

Attack Rate Over Past Five Years

	1946	1947	1948	1949	1950
Attack Rate /10,000	42	31	17	24	45

Malaria Cases and Adult gambiae Catches by Months

(Residents contracting in Nairobi)

Race	Jan.	Feb.	Mar.	Apr.	May	Jun.	July	Aug.	Sep.	Oct.	Nov.	Dec.	Total
Europeans	1	1	4	8	5	1	8	3	—	3	2	—	36
Asians	11	6	4	7	91	38	31	34	14	5	6	18	265
Africans	16	9	4	34	22	56	65	56	60	51	35	32	450
TOTAL	28	16	22	49	118	95	104	93	74	59	43	50	751
Gambiae Catches	0	0	1	18	279	670	244	8	4	—	—	—	1224

YELLOW FEVER — AEDES (DOMESTIC) MOSQUITO CONTROL

Inspections continued over the whole city area plus the addition of Spring Valley, an estate of approximately 160 houses outside the City's Western boundary. An addition of one searcher was made to our staff to deal with the latter.

THE TODD INSECTICIDAL FOG APPLICATOR



Anti-Fly measures at the Municipal Tip



Residual Spraying in African Housing

Control continued on the system of one inspection per fortnight. Total collections of all species numbered 3120, a decrease of 1633 on the 1950 to 57 in 1951. There would appear to be three main contributing factors to this. Firstly, unsuitable conditions; small collections of water favoured by *Aedes* were continually being washed out by the heavy rains. Secondly, tin collecting and destruction by the searchers on their routine inspections plus constant chivying of householders has removed a considerable portion of this menace. Thirdly, 90% of the junk dealers have scrap metal, old tyres, etc., relics of the immediate post-war period, are now closed down or removed to more suitable premises. Collections of rapidly disappearing.

Premises inspected during each cycle numbered 10,167 showing an increase of 486 new buildings over the 1950 figure. Total inspections of all premises during the year numbered 241,068.

Aedes Aegypti indices for 1951 were as follows :—

To Foci 0.003% — or 3 collections of larvae per 100,000 potential breeding places examined.

To premises 0.02% or 2 per 10,000 premises inspected.

Anopheles collections showed an increase of 75 over the 1950 total. This is attributable to the considerable amount of flooding which took place on private land due to the lack of antimalarial drainage in certain areas.

Notices and Prosecutions

During 1950 immediate legal proceedings were taken upon larvae being found in private premises, resulting in 287 cases being taken to court. This procedure was discontinued in 1951 and a reversion made to the former method of first serving a warning notice, proceedings to follow on a second offence. 2,658 such warning notices were served and six cases were taken to court. Total fines for these six cases amounted to Sh. 90/- and costs awarded totalled Shs. 50/-, an average of Shs. 28/- per case including costs.

It is felt that the public should be aware of their social obligations in this line now and that there is really a strong case for reverting to taking immediate legal proceedings without issuing warning notices.

TABLE 19

Aedes Permanent and Temporary Breeding Foci and Indices

Note: E — European area; A — Asian area; N — African area.	No. examined	Larval species found (times)				Larval species found (per cent)				
		Aedes		All		Aedes		All		
		Aegypti	Anopheles	Culex	Species	Aegypti	Anopheles	Culex	Species	
PERMANENT FOCI:—										
Concrete Drains	...	333,636	—	—	64	64	—	—	0.018 %	0.018 %
Earth Drains	...	109,520	—	32	191	223	—	0.029 %	0.174 %	0.203 %
Gully Traps	...	199,644	—	—	83	83	—	—	0.041 %	0.041 %
Rain Water Tanks	...	23,968	7	1	52	60	0.029 %	3.004 %	0.217 %	0.250 %
Septic Tanks	...	82,588	—	—	654	654	—	—	0.791 %	0.791 %
Soakage Pits	...	36,717	—	—	858	858	—	—	2.337 %	2.337 %
Sunken Drums and Bath Pits	...	28,200	4	—	310	314	0.013 %	—	1.099 %	1.113 %
Water Meters	...	2,198	—	2	126	128	—	0.091 %	5.732 %	5.823 %
TOTAL Permanent Foci	...	816,471	11	35	2,338	2,384	0.001 %	0.040 %	0.286 %	0.291 %
TEMPORARY FOCI										
...	...	712,926	47	46	977	1,070	0.006 %	0.006 %	0.137 %	0.150 %
GRAND TOTAL	...	1,529,397	58	81	3,315	3,454	0.003 %	0.005 %	0.217 %	0.225 %

Section 6

RODENT AND VERMIN CONTROL

In the absence of a Rodent Officer, Mr. Swan combined these duties with those of Mosquito Inspector on Malaria Control. This was an unfortunate arrangement as Malaria Control demanded most of this officer's time throughout the year due to the abnormal rains. This resulted in almost a complete stop to the rat-proofing programme. Four notices to rat-proof food premises were served and were complied with. Two notices under Public Health Ordinance were served to remove rat harbourage. One of these was complied with. Proceedings were taken on the other hand and the case was pending at the end of the year.

Plague

No cases occurred in Nairobi or in the immediate vicinity.

Rat Examinations

9,458 rats of all species were examined and no plague found.

Rodent Control

Routine trapping, poisoning and hand catching were continued with the usual vigour but gassing was curtailed due to lack of adequate supervision. Many thousands of rats must have perished in the river bank warrens with the sudden rush of flood waters. This appears to be borne out by the hand catching figures, in the swamp area particularly, where in 1950 307 *Rattus rattus* were caught in spite of gassing of the river banks, the 1951 figure shows a catch of 72 *Rattus rattus* and no gassing was done. *Mastomys* likewise show a decrease from 269 to 175 and *Arvicanthis* from 754 to 382. In the Abattoir area where the *Rattus rattus* live in great numbers in the river banks and feed on the scraps of offal, etc., washed down the drains into the river, fatalities must have been high as in 1950 213 *Rattus rattus* were caught by hand and many hundreds were killed by gas. In 1951 23 *Rattus rattus* were caught.

TABLE 20

Total Kill

<i>Rattus rattus</i>	(House rat)	...	...	...	...	2783
<i>Arvicanthis abyssinicus</i>	(True field rat)	...	...	...	...	4301
<i>Mastomys coucha panya</i>	(Hut/field rat)	...	...	...	...	7265
<i>Otomys angoniensis</i>	(Swamp rat)	...	...	...	...	11
Mice	(All species)	...	...	...	...	8168
Others	...	...	...	...	...	276
All species (by Railway administration)						4800
Total known killed						27604
Poisoned/gassed, estimate						10000
Total						37604

TABLE 21
Trapping in Native Locations

	Rooms Trapped	Houses Trapped	Rooms of houses Infested	Infestation Index	Trapping days	Rattus Rattus	Mice	Others	TOTALS
Shauri Moyo	—	206	150	72.8%	60	103	281	—	384
Pumwani	...	828	520	62.8%	164	330	417	—	747
Kaloleni	... 1,268	—	274	21.7%	104	37	631	1	669
Ziwani and Kariakor	... 1,225	—	380	31%	132	125	315	—	440
Bahati	... 800	—	23	2.8%	24	3	29	—	32
									2,272

Commercial Area. Premises trapped 1,417; premises infested 314; trapping days 204; index 22%. (1950 25.8%; 1949 45.7%; 1948 38%; 1947 40%).

Rattus rattus 561; mice 517; total 1078.

Poisoning. Poisoning was continued as a routine measure in all native locations in rotation. 26,558 poison baits were laid and of these 1,109 were taken. 344 bodies of rats were found but a considerably greater number can be estimated to have died in inaccessible places.

Gassing. Four private houses were treated and successfully cleared of rats and bats. 23 warrens were treated. These were occupied by large colonies of rats of various species in inaccessible places. 658 burrows were gassed by the Railway Administration. 9,000 is a fair estimate of the numbers killed by gas.

Hand Catching — In Buildings. This method can completely clear some types of buildings of rats and mice in a matter of an hour or so; in others a considerable reduction can be made in their numbers and the remainder cleared by traps and poison.

TABLE 22
Hand Catching Inside Buildings
AREAS

Species	Commercial area	Kariakor and Ziwani	Pumwani	Shauri Moyo	Kaloleni	Bahati	Totals
Rattus Rattus	276	76	16	171	—	—	539
Mice	275	1,156	94	2,568	28	13	4,134
Others	—	1	—	3	—	—	4
Totals	551	1,233	110	2,742	28	13	4,677

Hand Catching in the open. Considerable importance is attached to hand catching in the open. Plague is primarily a disease of rats, therefore field rats are as important in plague control as is the house rat (*Rattus rattus*), in fact the disease usually breaks out first amongst field rats, thence to the house-rat, and so to man, via the infected fleas. 1951 was a year of high rainfall with consequent high fertility and an abundance of the field rats' natural food. This has resulted in a great increase in the number of these vermin, at the same time making the job of controlling them increasingly difficult by the natural coverage. The increase is reflected only slightly in the figures for 1951 because of this difficulty. Long grass exists everywhere and the process of clearing is very slow indeed. Burrows and runs are hard to find and trapping and poisoning are out of the question in these wide open spaces, except in an emergency when strong measures would have to be taken regardless of risks, which would probably be the lesser evil. 1952 is a danger year for plague and will be more so if the rainfall should again be average or above.

TABLE 23
Hand Catching in Open Areas

Species	Commercial area	Kariakor and Ziwani	Pumwani	Shauri Moyo	Kaloleni	Bahati	Abattoir	Swamp	Ngara and Pangani	Other areas	Totals
<i>Rattus rattus</i> ...	—	68	117	64	52	43	23	72	16	49	504
<i>Mastomys coucha</i> Panya ...	—	117	76	3491	19	213	23	175	90	10	4274
<i>Arvicanthis abyssinicus</i> ...	8	277	510	2646	941	536	13	382	1307	602	7222
<i>Otomys angoniensis</i> ...	—	—	—	2	—	—	—	2	—	—	4
Mice ...	10	477	124	368	194	1	1	161	363	38	1737
Others ...	—	5	24	130	10	35	—	2	53	11	270
Totals	18	1004	851	6701	1216	828	60	794	1829	710	14011

Private and Special Anti-Rodent Work. In June three rat boys were sent to Ruiru Dam to deal with rats in stores. 24 *Rattus rattus* were caught by traps and by hand and many more poisoned.

Private premises dealt with numbered 82 in which 371 rats and mice were caught. Poison was used with success in a number of cases. Charges to the public for this work amounted to Shs. 2400/-.

Vermin Control

198 requests by the public for vermin destruction were dealt with. These were as follows:—

Bugs 113; cockroaches 29; fleas 25; ticks 3; lice 4; mites 2; flies, etc. 22. Charges for this work amounted to Sh. 9,161/04.

In addition to this 500 rooms in native locations were effectively cleared of bugs, etc., using T.I.F.A. at a cost of approximately Sh. 1/20 per room, reducing by almost half the cost of spraying by hand.

D.D.T./Pyrethrum Spray prepared by this section and sold to the public in small quantities realised Shs. 4,933/40, representing approximately 5,000 pints.

Insecticides prepared and sold to City Council and Government Departments and others in large quantities realised Sh. 21,058/16, representing approximately 3,500 gallons.

LABORATORY

Laboratory Assistants, Messrs. William Ongare and James Randiki, continued to deal conscientiously and efficiently with the continuous flow of materials from the numerous clinics. This has entailed solid hard work for eight hours of every working day.

Approximately 150 specimens daily were dealt with, a total of 40,586 for the year. The total for 1950 was 24,922. Details of the work for 1951 follow :—

Total examinations made during the year were as under :—

Bloodslides

Number with S. T. Rings	...	...	...	1471
Number with S. T. Crescents	...	...	...	335
„ „ B. T. Amoeboids	...	...	...	43
„ „ Filaria	...	...	...	17
„ „ Negative	...	...	...	7057
Total				8923

Stools

Number with Ova Ascaris	...	...	...	916
„ „ „ Taenia	...	...	...	132
„ „ „ Ancylostoma	...	...	...	172
„ „ „ Trichuris	...	...	...	81
„ „ S. mansoni	...	...	...	8
„ „ Flagelates	...	...	...	88
„ „ E. Coli cysts	...	...	...	122
„ Negative	...	...	...	1907
Total				3426

Smears

Found positive for Gonorrhoea	...	...	...	408
Found negative	...	...	...	8788
Total				9196

Urine Examinations

Number with Sch. Haemotobium	...	...	5
„ Negative	...	...	66
Total	...	...	66

Sputum Examinations

Number with Tubercle bacillus	...	...	4
„ Negative	...	...	25
Total	...	...	29

Gum Swabs

Number with Spirochaetes	5
„ Negative	7
Total	12

Blood Counts

Differential counts made	18
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Rats

18,916 blood slides of rats were examined for plague and all were found negative.

Section 7

SANITARY ADMINISTRATION

Probably the most important single item of progress during the year was the coming into force of the Factories Ordinance, — “An Ordinance to make Provision for the Health, Safety and Welfare of Persons Employed in Factories and other places, and for matters incidental thereto and connected therewith.”

Such an ordinance was very much overdue, for although requirements, especially of a sanitary nature, have been enforced through the provisions of other ordinances and the City Council By-laws, there has always been a sense of frustration in the sphere of welfare and safety of employees. This gap in the administration was closed on September 1st, 1951, when this important piece of legislation came into operation thus ensuring the much needed and worth while objects for which the ordinance was designed. The Labour Commissioner, the Chief Inspector of Factories and his staff on whose shoulders the administration of this ordinance falls may rely on the full support and assistance of the officers of the City Council when such provisions of the Ordinance with which local authority may be responsible, need attention.

At the same time the Ordinance brings some relief to members of the staff of the Council who, being conscious for many years of the need for such an Ordinance, have been compelled to extract whatever assistance they could from various legal enactments to secure the beneficial ends they had in view.

The Chief Inspector of Factories has kindly supplied the following figures which in themselves prove the need for such an Ordinance :—

No. of factories employing less than 10 persons	...	720
No. of factories employing 10 — 99 persons	...	307
No. of factories employing 100 or more persons	...	31
Total number of factories		... 1,058

No. of Africans employed	...	13,654
„ „ Asians	...	4,585
„ „ Europeans	...	734
„ „ Others	...	157
		19,130

There is little doubt that the circumstances surrounding these employees and their places of employment have left much to be desired in years past. The rapid growth of the city, the needs of the ever increasing community and the sometimes mistaken but almost universal opinion that “there must be no interference with progress” have all claimed to expose workers to dangers which have been prevented for many years in more advanced countries. It now remains to be seen if employees will appreciate what is being done for them and will show by their personal habits that efforts on their behalf have not gone unobserved.

Although the Ordinance seeks to protect persons employed in factories, it cannot, for obvious reasons, deal with the welfare of all

employed persons, and the group which comes foremost in one's mind is shop assistants. In the near future greater efforts must be made to remove those conditions in shops which are inimical to health and to provide those amenities which result in healthy minds and the corollary, physical fitness, and other desirable results which such conditions bring about.

As in the case of factories, much has been done about shops, and particularly places where the sale or serving of food is carried on. One of the things which has caused the department most concern during and since the war has been the unsatisfactory conditions in restaurants, eating houses and similar premises. Such improvements as have been made, while having as their chief aim the safety of the general public, also made conditions much more satisfactory for employees.

The work of bringing eating houses and restaurants up to a higher standard goes on, and the 213 inspections give no idea of the vast amount of work involved. In some cases it has been necessary to rebuild the interior of the premises in order to secure better kitchens and stores and to obtain sufficient light and ventilation. This can be a very expensive operation and one which is not entirely free from anxiety on the part of proprietors. As in all work of this nature, whether it be a major or a minor undertaking, difficulties continue to present themselves; indeed no sooner is one surmounted than another appears. The supply position has been bad for some years and with regard to the building and plumbing trades is even getting worse. Delivery often takes 18 months or longer from the date of ordering. Such things must be considered by the staff and great patience must be exercised. Scarcity often means goods being bought from a "friend of a friend", i.e. in the black market at extortionate prices thus adding greatly to the cost of repairs.

Sanitary improvements including the conversion of pail closets to the water-borne system have not progressed with a speed one would like and there was evidence during the year of an increasing opposition to better the sanitary conditions of property. Such tactics if prolonged, waste time and may eventually compel the attendance of at least two members of the staff at Court for many hours, so reducing effective working time very considerably. Many unsightly properties which appear to be in a dilapidated condition, particularly buildings with much corrugated iron in the construction, are really borderline cases and repairs and cleansing must be permitted to them. Large numbers of these old corrugated iron shops-cum-dwellings have been replaced by a good type of stone building more from the economic than from the altruistic urge of hygienic-conscious owners. Action more often than not was dictated by pressing departmental action.

Government has given considerable help to building trade and community generally in the past by removing customs charges on certain materials used in sanitary works, yet, on re-consideration, one is compelled to admit that the help is to some extent cancelled by the shortage of really skilled labour and the inconsiderate and easy going manner of many expensive and inefficient artisans.

With conditions as they are there appears to be a desire on the part of many landlords merely to keep some of the worst property from collapse in the hope that rents may be permitted to rise *pari passu* with the increased charges they are forced to pay. If modifications in the By-laws of the City Council could help reducing the standards and thereby

making work cheaper this would be recommended but "cheaper" work is a retrograde step. It can result in very high recurrent repair bills and would be a temptation to lower still further the quality of work which already demands considerable surveillance. The answer may be found, in part, in furthering standardisation — a reduction in the number of different types and the admission to the country only of fittings and parts which are readily interchangeable and which may be bought from a number of different stockists instead of from one store as at present. Such a scheme could be applied to other trades but this report concerns mainly those activities related to matters of health, hygiene and the production of clean and wholesome food.

Much has been done during the year towards maintaining a clean food supply. Indeed, particular attention has been directed to food premises — the total number of inspections (including individual market stalls 831) being 7,598. Restaurants, eating houses and the like continue to be potential danger spots but less so than formerly. These establishments have been brought to a reasonable standard during recent years but constant supervision is required to keep them in a thoroughly hygienic state.

Strenuous attempts have, and are, being made to improve the quality and ensure the wholesomeness of icecream. This is no easy task for in Nairobi, as in England and elsewhere, there are many difficulties to be

overcome not the least the least being obstructions contrived by interested parties. By-laws which became operative in 1950 are still the subject of argument despite their plain wording. It is most disheartening that there should be opposition to attempts at securing hygienic methods in the manufacture and dispensing of such a potentially dangerous article of diet as icecream. Yet opposition there is, as in all branches of Public Health work. It is not differences of opinion alone which arise — for these can be argued away — but the dangers which continue as a result of procrastination and the doubts which arise in the minds of people engaged in the trade. Other By-laws made and amendments to the existing code covered such subjects as Nursing Homes, Aerated Water Factories, Conveyance of Meat, Itinerant Dealers in secondhand goods, Refuse collection, Eating Houses and Tea Rooms. Other By-laws to control Nursery Schools, and creches and the manufacture of Rag Flock were compiled but have not yet become law. In the meantime advice and persuasion must be employed to raise standards and to remove dangers which are known to exist. Further legislation must inevitably be sought to ensure more hygienic methods particularly in the food trades and, in the not too distant future, additions must be considered to control the unwarranted manipulation of various articles which enter into our everyday diet.

Food manufacturers and others are always searching for "improvers" or substitutes for well established articles of food, for appetisers and for anything else which will improve the business. Public Health administrators are continually becoming aware of fresh Machiavellian cases of commercial mischief and even the vast Governmental organisations of the United Kingdom have no ready answers to some of the problems which arise.

The various processes in use and the application of modern compounds of insecticides in food stores must be permitted, because with our present limited knowledge there is no proof of harm or injury in their

use. The effects of these practices may — indeed it is highly probable in some cases — be of a cumulative nature and only time will prove the safety or otherwise of their application and use. Investigation into all cases of sickness of an obscure kind and the examination of the recorded findings may in time lead to the discovery of some slow acting food poison which, at the moment, is thought to be harmless. It is a sad reflection on our national dietetics to find that more attention is given to animals — their diet and build-up — than is given to human beings, although it is believed that the Ministry of Health is now conducting investigations into human diet and output — a course which might be adopted in Kenya, if only the favourable findings could be put into practice.

Unfortunately too many desirable innovations are impracticable of application among most sections of the African population in their present stage of development and the effects of local prejudice against a radical but unbalanced diet have already been experienced. Such changes for the good of the African can only come about through education — example is not enough or domestic servants would long since have made the change voluntarily.

Customs die hard and evolution is always a matter for suspicion whether it concerns birth, life or death. For instance some time ago the Council was somewhat concerned about the large areas of land required for burial purposes — a problem which reappears as each plot of ground becomes fully occupied — and consideration of possible sites outside the City boundaries became necessary. With high transport costs burials in cemeteries at a distance become expensive and such areas of land — which must be of good earth if they are to serve their purpose properly and without nuisance — are wasteful and to most people unpleasant and depressing. Such experiences, coupled with the present day desire on the part of many people to employ a more sanitary method of disposal have resulted in the perfecting of cremation, a hygienic way of dealing with the dead. This system is being adopted more and more in other countries, and there can be no doubt that, provided it is not commercialised to the point of irreverence, further adoptions of the method can be expected. Fourteen years have passed since the Council considered the proposal for a crematorium and adopted it in principle. Then came the war when minds and energies were directed to other things. Yet at that time the need for a crematorium was acknowledged and it was recorded :

“With regard to the financial commitment, although there is a prospect that eventually the revenue from the use of a crematorium will exceed the expenditure, there is likely to be a financial loss for the first two or three years, until members of the public have grown more accustomed to the idea of cremation, which although there are many in favour of it, it cannot be ignored that there are many more who regard cremation with disfavour.”

Again the need for the indoctrination of the value of this method is evident and, while the wishes of all people should be respected, the advantages should be continually presented so that, in time, the growing practice of this hygienic way of disposal in enlightened countries may be accepted in Kenya.

Opposition and objections will certainly arise but it should be made manifest that no compulsion or pressure of any kind would be applied. Cremation is advocated because of its undoubted advantages over earth burial. It is recognised by Public Health Authorities everywhere as the

No. of defects remedied following :—

Verbal intimation	...	...	...	...	...	...	...	1,136
Written	...	...	...	...	...	...	...	203
Statutory Notices	...	...	...	...	...	...	...	660

Licences :

Trade premises inspected and re-inspected	...	...	...	...	...	...	...	1,458
Taxi cab inspections	...	...	...	...	...	...	...	366
Food Carts : Milk — Meat — Bread — Sweetmeats	...	...	...	...	...	...	...	316

Erection and Alteration of Buildings :

(P.H.D. Supervision only).

Plans scrutinized	...	...	...	...	...	...	...	590
Inspections made	...	...	...	...	...	...	...	1,202
Completion certificates issued	...	...	...	...	...	...	...	153
No. of premises connected to sewers	...	...	...	...	...	...	...	70
No. of new water closets discharged into sewer	...	...	...	...	...	...	...	424
No. of septic tanks installed	...	...	...	...	...	...	...	14
No. of new water closets discharged into septic tanks	...	...	...	...	...	...	...	40

Unauthorised Buildings :

Inspections made	...	...	...	...	...	...	...	215
Notices served	...	...	...	...	...	...	...	12
References to other departments	...	...	...	...	...	...	...	193
Prosecutions	...	...	...	...	...	...	...	2
Structures demolished	...	...	...	...	...	...	...	23

Notices Served :

Intimation	...	...	...	...	...	...	...	127
Public Health Ordinance (Nuisance)	...	...	...	...	...	...	...	224
Public Health Ordinance (Others)	...	...	...	...	...	...	...	22
Rat and Mice Rules	...	...	...	...	...	...	...	3

By-laws : Notices Served

Drainage By-laws	...	...	...	...	...	...	...	197
Mosquito Control	...	...	...	...	...	...	...	151
By-law Nos. 59—60 : Asian Tea Rooms — dirty conditions, etc.	...	...	...	...	...	...	...	13
By-law No. 68 : Asian Tea Rooms, dirty clothing	...	...	...	...	...	...	...	8
By-law Nos. 93, 101, 109 : African Eating Houses; Premises dirty, etc.	...	...	...	...	...	...	...	23
By-law No. 155 : Butchers — dirty clothing	...	...	...	...	...	...	...	3
By-law No. 261 : Insanitary back premises	...	...	...	...	...	...	...	26
By-law No. 262 : Insanitary premises — huts, etc.	...	...	...	...	...	...	...	49
By-law No. 266 : Provision of latrines	...	...	...	...	...	...	...	22
By-law No. 269 : Latrines condemned	...	...	...	...	...	...	...	4
By-law No. 274 : Provision of temporary latrines for workmen	...	...	...	...	...	...	...	11
By-law No. 616 : Deposits of materials	...	...	...	...	...	...	...	11
There were also seventeen miscellaneous By-laws contravened which necessitated the service of thirty-three notices	...	...	...	...	...	...	...	33
These were concerned with such matters as lodging houses, rat-proofing, sleeping in foodstores, paving of yards and general nuisances.	...	...	...	...	...	...	...

Prosecutions

	Cases	Convicted	Acquitted Discharged	Adjourned/ Pending
Public Health Ordinance ...	20	14		6
By-laws	71	65*	5	
Milk & Dairies regulations	15	14		1
	106	93	5	7

* One accused absconded.

Total fines Shs. 13,009/40 and costs Shs. 756/-.

There were four sentences of imprisonment awarded.

Inspections of premises subject to special control

Aerated water factories	...	...	...	...	...	152
Bakeries	...	...	...	...	...	214
Butchers	...	...	...	...	...	873
Dairies and Milk shops	...	...	...	...	...	384
Eating Houses	...	...	...	...	...	1,740
Fishmongers	...	...	...	...	...	63
Food Factories	...	...	...	...	...	200
Groceries and Provisions	...	...	...	...	...	2,097
Hotels and Bars	...	...	...	...	...	254
Markets (Stalls numbered 831)	...	...	...	...	...	40
Restaurants and Tea Rooms	...	...	...	...	...	308
Vegetable Sellers	...	...	...	...	...	442
						<u>6,767</u>

Liquor Licences

The number of applications for liquor licences showed an increase over the previous year, and the inspection of premises was followed by cleansing, repairs and improvements with a minimum of office work.

As in most trades there will always be people who abuse trust and the dispensing of liquor is a trade which especially offers temptations to break that confidence; indeed, some licencees consider the trade merely a profit making business and the devil must look after his own.

The non-spirituous type of liquor licence has been available for some time — a licence which permits the sale of the more expensive beer to Africans, and a licence which leads to the abuse of privilege; but this could hardly be foreseen when the right to buy “European” beer was granted. All too often the “Off licence” premises degenerate into open bars, the customers standing or squatting around the open shop and presenting an altogether unpleasant scene.

The unhealthy side of the picture can best be understood when it is pointed out that very few, if any, of these premises have sanitary conveniences, since, not being licensed to sell liquor for consumption on

the premises, they are not required to have conveniences. Consequently, resort must be made to public conveniences which are not sufficiently close for some people with a result easily imagined. One of the reasons for consumption near the premises may be the urgency of recovering the “money on the bottle”, an outlay which might be lost if the liquor were taken home.

The answer may be beer shops — properly constructed premises in which the beverage could be consumed in comfort. On the other hand there are strong moral reasons why the breadwinners should be discouraged from spending too much time in a bar.

Liquor Licence Applications

Non-Spirituous	...	...	...	...	...	...	...	160
Wine Merchants and Grocers			...	...	...	...	...	93
General Retail	...	...	...	...	...	...	...	16
Restaurant	...	...	...	...	...	...	...	9
Hotels	...	...	...	...	...	...	...	7
Wholesale	...	...	...	...	...	...	...	10
Others	...	...	...	...	...	...	...	7
								<hr/> 302 <hr/>

City Mortuary

This somewhat ancient building, set as it is in the Stores' yard, almost out of sight and out of mind, continues to serve the needs of the City and of a considerable area surrounding it.

Attempts have been made from time to time to make the place a little more convenient for the work of pathologists and a little less repugnant to people who must visit it. The suggestion made some years ago, to erect a more suitable building as part of the Group Hospital, now known as King George VI Hospital, did not materialise; yet a modern, properly equipped mortuary has been an essential need for many years.

During the year 1951, the number of bodies received into the mortuary totalled 249, divided as follows:—

Africans	...	201
Asians	...	15
Europeans	...	33

A considerable number of these were brought into the City from other districts, a point which indicates that the institution should be a Government responsibility, especially as the pathologist is a government officer who is thus compelled to undertake post-mortem examinations under conditions which, although considered suitable in the “make do” days of thirty years ago, are now deemed unsuitable for a pathologist's work.

African Burials

The City Council, as the local authority responsible for the burial of deceased Africans, disposed of 1,252 bodies, an increase of 27 over the previous year. It became necessary to prepare more land for an African cemetery and it is only a matter of time before excursions must be made beyond the City boundaries to find suitable land for this purpose unless previously used ground is to be re-opened or other means of disposal are to be adopted.

The numbers and the institutions from which the bodies were removed are as follows :—

African Civil Hospitals	...	...	...	...	...	...	702
Pumwani Maternity Hospital	...	...	...	...	...	...	219
Mathari Hospital	...	...	...	...	...	...	48
Prison	...	...	...	...	...	...	30
Infectious Diseases Hospital	...	...	...	...	...	...	128
Mortuary	...	...	...	...	...	...	123
General Dispensary	...	...	...	...	...	...	2
							<hr/> 1,252 <hr/>

Animals, etc., Impounded

If a public pound is a measure of the care or carelessness of a community, the figures for the City of Nairobi reveal a degree of unconcern which is perhaps sympathetic of life at 5,000 feet in a tropical country. Homeless dogs head the list with 733 and the pound contained at one time or another such things as bags of charcoal, baskets, and building stone found ownerless.

The money collected in fees from people who later claimed their mislaid goods amounted to Shs. 3,767/45. The entries recorded were :—

Dogs	...	...	...	...	733
Poultry	...	...	...	...	717
Cattle	...	...	...	...	318
Sheep and Goats	...	...	...	...	58
Baskets	...	...	...	...	75
Turkeys	...	...	...	...	5
Bags of charcoal	...	...	...	...	6
Ducks	...	...	...	...	2
Building Stone	...	...	...	...	1 load
Handcart	...	...	...	...	1

Section 8

FOOD INSPECTION**Milk**

A comparison of the results of samples taken over the past year with the results obtained in 1951 gives the impression that nothing has been accomplished during the past 12 months in improving the quality of Nairobi's milk supply, — Category 'A' samples having dropped from 78% to 75% of the total. On explanation however it will be seen that the problem of unsatisfactory milk is becoming much more simple. It will be noted to begin with that the total number of samples Resazurin Tested shows an increase of 72% on the previous year — so that the results are much more comprehensive. Furthermore, a scheme was adopted whereby milk, which at the time of the routine sampling is found to be unsatisfactory is systematically sampled for several days — often each can from the particular producer being individually sampled. This has inevitably increased the number of Category B and C results out of their true proportion. The really significant figure is the proportion of unsatisfactory milk which the samples represent rather than the number of unsatisfactory samples. This can be computed reasonably accurately in the following manner:

Of the 73 producers whose milk was regularly sampled, 62 were found to be sending in milk of Category 'A' quality. Included in the 62 are all the larger producers and, taking an average throughout the year, it is found that 94% of the total quantity of milk delivered in Nairobi is from farms regularly producing milk of Category 'A' standard. This can be regarded as a remarkably high percentage, the credit for which is largely due to the high degree of co-operation which exists between this section of the Public Health Department and the milk producers' organisations. It is also largely because of this liaison that it has not been found necessary to prosecute any producer for persistently selling unhygienic milk, for when milk of this type is discovered, it has almost invariably been possible to arrange for the supply from the offending farm to be suspended until the quality has been improved. Wherever possible, advice has been given to the farmer where samples have proved the milk to be unsatisfactory, but inadequate staffing restricts the amount of advisory work of this nature which should form a vital part of any cleaner milk campaign.

The offer of a cup by Sir Richard Woodley for the best kept dairy during the year stimulated a certain amount of interest and was the means of some improvements being effected, but much remains to be done. Most of the retail dairies occupy premises in the central commercial area of the City which are quite inadequate to cope with the amount of business carried on and where extensions are impossible. One large dairy, however, has almost completed the building of spacious new buildings with modern pasteurising, bottling, capping and sterilizing equipment, and others will doubtless be compelled to follow suit.

TABLE 25

Samples Examined by Food Inspector**1. RESAZURIN REDUCTION TEST**

Month	A.	B.	C.	Total
Disc Reading				
	4.6	1.3½	0.½	
January	60	11	16	87
February	121	23	15	159
March	119	22	31	172
April	133	43	61	237
May	124	23	30	177
June	117	24	8	149
July	264	20	13	297
August	258	19	15	292
September	266	53	28	347
October	333	60	56	449
November	439	70	80	589
December	286	61	65	412
Total	2,520	429	418	3,367

2. PHOSPHATASE TESTS

Efficiently Pasteurised	Inefficiently Pasteurised	Not Pasteurised	Total
36	3	4	43

3. ESTIMATION OF FAT AND TOTAL SOLIDS

	Satisfactory	Unsatisfactory	Total
Milk	405	47	452
Cream	2	1	3
	407	48	455

TABLE 26

Samples submitted by Food Inspector to Government Chemist

Article	Satisfactory	Unsatisfactory	Total
Brandy	2	—	2
Brandy and Soda	—	1	1
Cordials	4	1	5
Custard Powder	1	—	1
Lard	1	—	1
Mushrooms	—	1	1
Pickled Meat	1	—	1
Posho	1	—	1
Sugar	1	3	4
Water	6	—	6
	17	6	23

Samples submitted by Food Inspector to Government Bacteriologist

Article	Satisfactory	Unsatisfactory	Total
Water (Town Supply)	150	38	188
Water (other supplies)	23	13	36
Mineral Water (inc. Cordials)	145	10	155
Milk	14	4	18
Sugar	3	—	3
Tinned Meat	5	—	5
Meat Pies	—	3	3
	340	68	408

Other Foods

It has not been possible so far to extend the vigorous control, which is kept on milk supplies, to other foods. In most towns the size of Nairobi one Inspector is employed full time on taking samples under the Food and Drugs Ordinance and investigating cases of adulteration. The effect of routine sampling may be likened to that resulting from the regular patrol of the policeman on the beat — it has the effect of preventing crime as opposed to the more spectacular apprehension of the criminal after an offence has been committed. Such work, however, cannot be contemplated with existing facilities. Nevertheless, regular inspection and sampling of water and mineral water supplies has been maintained — the number of samples of mineral waters submitted to bacteriological examination showing an increase of 300% on last year. Of the 155 samples tested, 93% were found to be satisfactory. This however can be no excuse for complacency as many of the mineral water factories, while complying with the letter of the bylaws, still fall far short of the ideal.

The quality of much of the sugar made available to the public during the past year continued to give rise to a large number of justifiable complaints. The different consignments, of both Mauritian and East African origin, vary considerably, some containing extraneous matter such as fragments of wood and string and some large lumps of unrefined sugar. All of it is more or less objectionable in appearance and much of it very unappetising. However, owing to the fact that samples submitted for analysis failed to show the presence of pathogenic organisms or harmful extraneous matter, the Public Health Department has been powerless to prevent its sale. In the course of a prosecution against one of the largest retail groceries in the City the defence produced in Court half a sackful of sugar containing unrefined lumps the size of a football. Representation made to the Government Departments concerned in Kenya and to the Ministry of Food in England have so far failed to bring about any marked improvement.

A very large proportion of the foodstuffs condemned during the year had to be destroyed on account of rat contamination. This has been due to lethargy on the part of food handlers in failing to observe the fundamental rules of food storage, and to the fact that for much of the time no Rodent Officer was available to carry out the essential routine inspection of stores likely to harbour rats. Where such contamination has been found, the occupier of the premises has been given the opportunity of surrendering the unfit food but when voluntary surrender has been refused the food has been seized and the offender prosecuted. Details of other prosecutions in connection with food offences will be found in one of the following tables.

TABLE 27

Legal Proceedings instituted by Food Inspector

Nature of Offence	Prosecu- tions	Convic- tions	Acquit- tals	Penalties	Costs
Milk and Dairies Regulations					
(a) Using unregistered premises as dairy	3	3	—	600/-	20/-
(b) Purveying milk without Licence	3	2	—	55/-	
(c) Selling or conveying adulterated milk	8	8	—	210/- 2 months & 8 weeks hard labour	10/-
(d) Dirty dairy premises	1	1	—	200/-	10/-
Public Health Ordinance					
(a) Selling contaminated foodstuffs	1 1	— 1	1 —	50/-	12/-
(b) Failing to protect					
Nairobi Municipality (General) By-laws					
(a) Dirty eating houses	6	6	—	430/-	30/-
(b) Dirty employees	6	6	—	430/-	30/-
(c) Dirty Butchers' shops	3	3	—	500/-	10/-
(d) Dirty employees	3	3	—	150/-	12/-
(e) Dirty Bakehouse	1	1	—	300/-	22/-

TABLE 28

Unsound Food Condemned

Article	lb.
Fish	3,183
Flour and Grain	13,824
Fruit	6,704
Meat	17
Milk	80
Provisions	2,035
Sugar	8,940
Sweets	1,321
Tinned Fish	6,842
Tinned Fruit	276
Other Tinned Foods	4,864
Vegetables	1,447
Miscellaneous	3,705
Total	53,238

Section 9

MEAT INSPECTION

The abattoir is now owned by the Kenya Meat Commission but the Municipality continues to do a daily meat inspection of all animals killed. This, of course, is in the direct interest of the public health and is considered as an essential service by this department.

A high standard of inspection is maintained.

All meat thus inspected and passed as fit for human consumption is stamped at the abattoir and all meat sold in butchers' shops, which are within the municipal boundary, should be thus stamped.

It is an offence to sell any meat which has not been dealt with in this way. It is regrettable, however, that the breaking of the law is not infrequent and while every endeavour is made to discover such illegal practices the task is not an easy one.

The following table shows the proceedings instituted for this offence by the Meat Inspector :—

TABLE 29

Legal Proceedings Instituted by Meat Inspector

Nature of Offence	Prosecu- tions	Convic- tions	Acquit- tals	Total Penalties	Costs
Exposing for sale or keeping Meat or Poultry which had not been inspected and passed as fit for human consumption	23	22	1	(1) 2 mths. simple imprisonment.	Shs. 2,604/-

In addition to inspecting Meat and Poultry at the Abattoir routine examination of Meat and Poultry is carried out at retail premises throughout the year. The number of visits made was as follows :—

Stalls at Markets	Butchers' Shops	Grocers' Shops	Hotels, Restaurants, Eating Houses
669	531	132	200

Routine inspection at the Abattoir was carried out by a European Inspector helped by a locally trained African Assistant. Details of the work done are shown in the following table :—

TABLE 30

Carcases Inspected

Animal	1949		1950		1951	
	No. of Carcases	Weight of Meat passed lbs.	No. of Carcases	Weight of Meat passed lbs.	No. of Carcases	Weight of Meat passed lbs.
Grade Oxen	11,723	5,744,270	12,955	6,477,500	18,794	8,752,422
Natie Oxen	10,119	2,307,923	6,753	1,553,190	1,656	369,479
Calves	1,058	76,556	729	54,675	489	27,772
Grade Sheep	14,582	510,360	12,514	475,532	11,964	400,069
Native Sheep	15,437	376,090	19,560	489,000	16,693	341,032
Goats	23,352	561,475	18,192	454,800	12,610	281,613
Pigs	9,208	747,922	11,104	877,167	11,725	956,713
Poultry	184,364	461,815	181,603	453,374	192,774	481,935
TOTAL	269,843	10,786,411	263,410	10,835,238	266,705	11,611,035

The number of grade animals slaughtered has increased year by year since 1949. Much more grade beef is now consumed than beef from native sources.

The number of native cattle slaughtered was greatly reduced in 1951 compared with 1949 and 1950. This can be accounted for by the inflated prices paid for native cattle and by the high percentage condemned.

TABLE 31

Carcases Condemned

Animal	1949		1950		1951	
	Number	Rate %	Number	Rate %	Number	Rate %
Grade Oxen	209	1.8	416	3.2	883	4.1
Native Oxen	1,157	11.4	989	14.6	460	27.7
Calves	173	16.3	161	22.1	136	27.8
Grade Sheep	34	0.2	32	0.2	75	0.6
Native Sheep	393	2.5	294	1.5	226	1.9
Goats	889	3.8	309	1.5	515	4.1
Pigs	34	0.3	36	3.2	86	0.7
Poultry	768	0.4	651	0.3	656	0.3
TOTAL	3,657		2,890		3,037	

Conditions Necessitating Condemnation

DISEASE	Grade Oxen	Native Oxen	Calves	Grade Sheep	Native Sheep	Goats	Pigs	Poultry
Anaemia	—	—	—	—	—	—	—	—
Bruising	44	—	—	9	4	1	27	197
Cancer	5	—	—	—	—	2	—	—
C. Bovis	621	366	89	—	—	—	—	—
C. Cellulosa	—	—	—	—	—	—	2	—
Dropsy with Emaciation	125	66	4	16	112	294	8	8
Emaciation	—	11	4	9	11	3	—	28
Fevered Condition	103	8	1	10	11	38	12	65
Immaturity	—	—	29	—	—	—	—	—
Jaundice	11	5	1	12	20	11	—	40
Lymphadenitis	—	—	—	4	9	76	—	—
Moribund	—	—	—	—	—	—	—	164
Pleuropneumonia	—	—	—	4	2	4	—	—
Septic Condition	20	10	—	20	57	87	22	223
Shot Carcase	—	—	—	—	—	—	5	—
Skin Disease	—	—	—	—	—	—	—	31
Tuberculosis	9	1	—	—	—	—	10	—

Organs Condemned

Hearts	...	...	...	1,547
Heads	...	...	...	242
Tongues	...	...	...	176
Kidneys	...	...	...	4,772
Livers	...	...	...	38,712
Lungs	...	...	...	13,745
Spleens	...	...	...	168
Stomachs	...	...	...	43
Intestines	...	...	...	43
Others	...	...	...	11,264
TOTAL			...	70,712

Total Weight Condemned (lbs.)

Grade Oxen	...	...	443,370
Native Oxen	...	...	106,234
Calves	...	...	8,842
Grade Sheep	...	...	14,899
Native Sheep	...	...	15,392
Goats	...	...	16,939
Pigs	...	...	12,764
Poultry	...	...	3,887
TOTAL			622,327

Measle Rate

	Number Inspected	Condemned for Measles	Rate %	Measly Carcases Passed	Rate %
Grade Oxen	18,794	621	3.3	968	5.1
Native Oxen	1,656	366	22.1	187	11.2
Calves	489	89	18.2	47	9.6
TOTAL	20,939	1,076	5.1	1,202	5.7

Disposal of Condemned Carcasses

	Number			Weight lbs.
Measly Carcasses cooked	1,195	293,054
Diseased Carcasses processed	1,842	329,273

MUNICIPAL COMPOST SCHEME



Mechanical Refuse Handling



Compost Stacks



Sieving Compost



Residual Compost Disposal

Section 10

CLEANSING DEPARTMENT

The number of bucket latrines in the City remained almost the same as in 1950 since any increases were offset by those areas which became sewerred. The number of buckets on the 1st January was 7,445 — the total tonnage removed was 10,975 tons.

Conservancy and waste water tanks showed an increase during the year and it is fast becoming necessary to increase the number of vehicles if adequate service is to be maintained. The drop in waste water pit emptyings is largely due to the very heavy rain which made large portions of the City inaccessible for long periods.

A total of 54,540 tons of refuse was removed compared with 51,009 tons last year. A proportion of this estimated at about 500 tons was composted. The first sales of compost were made and a total of 149 tons was sold during the year. The balance of the refuse was dealt with by controlled tipping. The daily average of 149.5 tons compares with 139.7 for the previous year. During the year two mechanical horses were written off in accidents thus causing great transport difficulties towards the end of the year. This reflected mainly on the refuse collection side which in some areas had to be put on a twice weekly collection instead of the usual daily basis.

The working of the street cleansing section was very seriously handicapped by the unusual heavy and prolonged rains which invariably results in the bringing in of very large quantities of mud. Owing to the short gap between the rain periods it was never possible to get the streets satisfactorily cleaned.

The total amount of junk removed was 1,232 tons.

A considerable work had to be performed under the Public Health Ordinance clearing private streets. The number of plots cut was normal. Many of the stone pitched and concrete drains in Nairobi were seriously damaged during the heavy floods early in the year and in addition there was a considerable amount of debris left in drains after the floods had subsided.

The rapid growth of the Industrial Area meant that the staff working in that area had to work beyond capacity. The growth in the residential areas is also most marked and here again the staff has been strained to the limits.

Conservancy

	1950	1951
Estimated totals tons night soil removed and disposed of	12,475	10,975

Exhausting

Total conserving tanks emptied	4,125	4,692
Total septic tanks emptied	844	1,123
Total waste water pits emptied	13,675	11,724

Refuse Removed

Total estimated tons refuse collected and disposed of	51,009	54,540
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Section 11

SEWERAGE AND SEWAGE DISPOSAL

(From the Annual Report of the City Engineer).

General. During 1951 Nairobi has continued to develop at a high rate, creating a considerable demand for services. The commercial areas of Nairobi are now largely sewered and the main demand for new works exists in the residential and industrial areas.

The Council has embarked on a considerable programme of works to fill these needs, and the main items are as follows :—

- (a) A main sewer is under construction between Eastleigh and the High Ridge area at an estimated cost of £45,000. Work is well advanced and should be completed by the middle of 1952. This sewer is the necessary preliminary to the sewerage of the majority of Parklands.
- (b) The Council's Consulting Engineers, Messrs. Howard Humphreys and Sons, have submitted a scheme for the sewerage of a further area of Parklands at an estimated cost of £53,000, and they have been instructed to obtain tenders for the work.
- (c) Messrs. Howard Humphreys and Sons have also prepared a scheme for the sewerage of the Industrial Area at an estimated cost of £260,000 involving the construction of about 17 miles of sewers. A contract has been let for this scheme and work has been commenced. It is estimated to take 2½ years.

New Construction. In 1951 a total of 35,264 lin. feet of sewers were constructed, compared with 25,378 lin. feet in 1950 and 30,118 lin. feet in 1949. Of this figure 468 lin. feet was reconstruction work, and therefore the total length of new sewers is 34,796 feet or 6.59 miles.

These works were situated as follows :—

	Lin. Feet
Landhies Road	4,416
High Ridge Estate	11,778
Hill Area	3,864
Parklands Trunk Sewer	6,924
Woodley Estate	955
Pumwani	1,100
Plot 3271, Juja Road	1,010
Miscellaneous Short Sewers mainly in Asian Residential Areas	4,749
Reconstruction near Juja Road ...	468
	<hr/>
	35,265 lin. feet
	<hr/>

Of the above work :

28,942 lin. feet was constructed under contract.

5,513 lin. feet was constructed by direct labour.

1,010 lin. feet was constructed by private developers to

Council's specification.

Standard of Work. There was a considerable improvement in the standard of work compared with previous years.

Sewage Disposal Works. The operation of the Disposal Works at Eastleigh has been satisfactory during the year.

The dry weather flow to the Works has now exceeded the designed capacity of 1,250,000 gallons per day, however, and it is necessary to enlarge the installation. A contract valued at £55,000 has been let for the first phase of this work and further contracts will be let during 1952, and these will bring the Works capacity to 3,000,000 gallons per day.

Maintenance. New equipment has been obtained from England and it has been possible to improve the regular maintenance.

In past years it has been mentioned that the majority of blockages and damage to sewers has been caused by misuse, and it is regretted that no improvement during 1951 can be reported.

Statistics

Mileage of sewers in 1950	...	...	51.11 miles
Constructed during 1951	...	...	6.59 miles
			<hr/>
Total at the end of 1951	...		57.70 miles

During the year the Council made 241 connections to the sewerage system, compared with 451 in 1950.

Section 12

WATER SUPPLY

(From the Annual Report of the City Engineer).

General. The year 1951 has been one of the wettest on record and considerably less water has, therefore, been used on garden watering so that, with plentiful supplies available from Ruiru, there have been few cases of water shortages in the City throughout the year and no restrictions were necessary. New mains were laid in the Parklands, Kilimani and Burnbrae areas and the previous difficulties experienced in these areas greatly alleviated.

Existing Sources of Supply

- (a) **Kikuyu Springs.** These have given an unfailing supply of approximately one million gallons of water of excellent quality throughout the year, and with the very good rainfall the reservoir has been maintained full.
- (b) **Ruiru Reservoir.** Supply from this source has been excellent in quality, although during the heavy rains the water has contained a considerable quantity of silt and wattle bark dye, which has necessitated fairly heavy doses of chemicals to clarify at the Filter Plant.

Over three and one half million gallons of water per day have been taken from this Reservoir, yet with the excellent rains the maximum draw-down by March was under 7 feet and by 30th April the Reservoir was again full and water has been flowing over the spillway continuously since that date. This indicates that, with anything approaching normal rainfall, the available supply from the Ruiru Dam may be considerably in excess of the two million gallons per day originally estimated.

- (c) **Nairobi Dam.** This Reservoir was in service only for January and February, from which date the water available from Ruiru, which is of better quality and cheaper, has been adequate to serve the full requirements of the City. The Reservoir had sunk to a depth of approximately 12 feet only, when the exceptional rain on the night of 25th April caused the level to rise 11 feet in the one night and with the continued good rains the Reservoir has been completely filled and water flowed over the spillway for the first time on Sunday, 29th April, and the Reservoir has remained full since that date.

Services. The demand for new connections continues and 773 new connections were given during the year, an increase of almost 15% over the previous year. The total number of connections is now 8,244.

Purity of Water. On the outbreak of the heavy rains, the water from Ruiru became heavily charged with silt and organic matter and the filter beds, working at above their rated capacity, were unable to treat satisfactorily these additional quantities, and a high proportion of unsatisfactory water tests were being obtained. Sedimentation tanks were designed and constructed to assist the filters, and these were completed and put into service by November, 1951.

Since the sedimentation tanks were brought into use, there has not been a single unsatisfactory result in the water tests.

Rainfall. The year 1951 produced the highest rainfall almost since records were first taken, and the several exceptionally heavy falls gave plentiful run-off and all the dams were overflowing by the end of April.

At the Lari Forest Station, Uplands, which is the main gathering ground for Ruiru Dam, the details of rainfall for the past 7 years are :—

Year			Total Rainfall
1945	...	...	43.35 inches
1946	...	...	57.02 inches
1947	...	...	68.19 inches
1948	...	...	52.96 inches
1949	...	...	31.96 inches
1950	...	...	52.14 inches
1951	...	...	68.64 inches

New Works

- (a) **Chania-Sasumua Scheme.** Progress on the dam on the Sasumua was very disappointing and well behind schedule.

Pipes for the 16" diameter new pipeline from the Sasumua were ordered and deliveries commenced; a contract for the laying was accepted.

A contract was placed for the treatment works plant.

- (b) **Sedimentation Tanks, Kabete.** These tanks, designed to assist the Filter Plant to cope with overload and to improve the quality of the water, were completed in November and have resulted in considerable improvement in the quality of the water.
- (c) **Parklands — High Ridge Main.** A scheme for new mains throughout the whole Parklands area was approved by Council, and although the whole of the scheme has not yet been completed owing to delay in receipt of pipes, the 6" diameter main up Mpaka Road and along the High Ridge/Ring Road up to Limuru Road has been laid, thus permitting the development of the High Ridge area and greatly improving the supply throughout the higher areas of Parklands.
- (d) **New Mains.** Over 14 miles of new mains from 15" diameter down to 1½" diameter were laid to serve rapidly developing areas. These included mains to serve Parklands—High Ridge, Papier Estate, Kileleshwa and Upper Hill areas and many minor estate developments.

Statistics

	1949	1950	1951
Total deliveries—million gallons	1,105	1,314	1,555
Average daily deliveries—million gallons	3.048	3.772	4.250
Population — estimated	130,000	140,000	149,000
Average daily delivery per head—gallons	23.5	26.0	28.5

Section 13

EUROPEAN CHILD WELFARE

The year 1951 saw a major expansion of the previously rather meagre European Child Welfare Service. The appointment in April of a full-time Health Visitor at last made it possible both to increase the number and duration of Clinic sessions and to visit children in their homes. Experience in the ensuing nine months clearly demonstrated how great had been the need for such expansion and how much it is appreciated.

Dr. Philippa Gaffikin continued as Medical Officer throughout the year.

For the first three months of the year Miss Watson continued to act as Clinic Sister, and much gratitude is due to her for having borne so long this added burden on an already over-busy life. At the beginning of April Mrs. Graham was appointed to the new full-time post and from then onwards she carried out the entire Health Visitor duties.

Buildings

The European Child Welfare Department is still "making do" with inadequate accommodation.

The Parklands Clinic sessions were held as before in the Matron's office and Schoolroom of the Day Nursery, and with the addition of a second session each week the dislocation of the Day Nursery's routine has increased.

In the Ngong Road area a separate clinic building is envisaged on Woodley Estate, but is not likely to be completed until the middle of 1952. It seemed a pity to leave this extensive district so long without a clinic, and an approach was made to the Old Cambrians' Club whose President and Committee very generously made their Clubhouse available on two afternoons each week.

Clinic Activities

From the third week of April clinic sessions were held weekly as under :—

Old Cambrians' Sports Club :

Mondays 2.00—4.00 p.m. Medical Officer and Health Visitor.

Tuesdays 2.00—4.00 p.m. Health Visitor only.

Parklands Day Nursery :

Wednesdays 3.00 —5.30 p.m. Medical Officer and Health Visitor.

Thursdays 3.00—5.30 p.m. Health Visitor only.

Despite the fourfold increase in clinic hours, the sessions still tend to run on beyond their supposed closing time, in particular that of Wednesday afternoon which rarely ends before 6.15 p.m.

Children attending the clinics were examined by the Medical Officer on their first visit, and on any subsequent occasion when there

was a deviation from normal or when the mother wished to have medical advice. At other times their progress and well-being were supervised by the Health Visitor. Numbers increased steadily through the year and the total of 3,094 attendances was more than double that of 1950.

The special Nursery School Clinic on Tuesdays was discontinued in April in favour of an additional public session, but the routine examinations of Day Nursery children — at entry and at intervals of six months — were maintained through the year.

Immunisation against smallpox, diphtheria, whooping cough and the typhoid-paratyphoid group is available at both clinics, and full advantage was taken of these facilities.

The co-operation of Nairobi's General Practitioners was a very pleasant feature of the year's work. Children were frequently referred to the clinics by their family doctor for such things as test feeds, feeding problems, difficult convalescence: and reciprocally from the Clinics to the doctors for treatment of any abnormality noted at the clinic session.

Home Visiting

The Health Visitor began her campaign of home visiting by district visits throughout the city, in order to establish contact by degrees with the "under-sixes" — believed to number approximately 1,800. By the courtesy of Miss Heycock, Principal Matron of the Hospital Authority, a weekly visiting day was also arranged in the Princess Elizabeth Hospital to contact our newest citizens and their mothers, and with the co-operation of the respective Matrons a similar visiting programme was carried out in the various Maternity Homes. By this means the existence of extended Child Welfare services was brought to the knowledge of a much wider circle, and the innovation has proved a great success. A considerable proportion of the toddlers and the great majority of newborn infants became regular clinic attenders.

Health, like Charity, begins at home, and home visiting is the foundation of all good welfare work. It was long suspected that there were European families in Nairobi whose living conditions were hygienically sub-standard: these suspicions have been amply confirmed, and it is just such families that a Health Visitor, by tactful advice and practical demonstration, can guide along the road to healthy living. Even where home conditions are good, it has been proved that a home visit can be a real boon to a young mother struggling with the day-to-day problems of her first baby; or to an older mother new to the country, with experience of children, but not of the difficulties peculiar to life in Africa.

The children of to-day are the citizens of to-morrow, and a healthy young population is a major asset to a young country. It is the hope of the European Child Welfare Department that in time the health of every child in Nairobi will receive supervision and guidance from birth until, at six years of age, he passes into the care of the School Medical Officer. Such provision for positive health is accepted all over the world as the birthright of citizens in any modern and progressive city — such as we hope and believe Nairobi is.

TABLE 32

Clinic Attendances**Attendances**

		Parklands	Ngong Road
For advice and weighing	... ..	1,709	602
Vaccination	... ..	125	52
Diphtheria immunisation	... ..	195	61
T.A.B.	... ..	108	8
Whooping cough immunisation	...	176	88
	TOTALS	2,313	781

New Registrations

0—1 year	... ..	118	56
1—6 years	... ..	102	47

Comparative Figures 1947—1951

	1947	1948	1949	1950	1951
Advice and weighing	16	160	809	1,182	2,311
Vaccination	31	98	90	102	177
T.A.B.	20	65	152	68	116
Diphtheria Antigen	14	307	203	113	256
Whooping cough immunisation	nil	1	72	97	234
TOTALS	81	631	1,326	1,532	3,094

PARKLANDS DAY NURSERY

The nursery started the year with absentees through chickenpox which lowered the attendance for January and February. By March the children were back in full numbers and the rest of the year was busy with good attendances.

In April Mrs. Salmon left to go on overseas leave with her husband and on returning to East Africa went to Kampala. We were very sorry to lose her. Mrs. McGrath began at the nursery in May and took over the supervising of the kitchen and preparation of the food. Mrs. Hill was married in July and continued on the staff as Mrs. Stiebel.

The children leaving the nursery and going on to Primary schools in 1952 were again well prepared for this venture by Mrs. Simpson and Mrs. Celling. It is very gratifying to learn that ex-nursery children have done so well at their schools. The 1st, 2nd, 3rd and 1st and 3rd places in the primary classes at Parklands School and Nairobi Primary School were obtained by children who had received their kindergarten training at the Nursery.

Father Christmas again paid an early visit to the nursery. Parents were invited along with the children and were entertained to tea. A Nativity scene was played and sung by all the children. This was followed

by "Snow-white and the Seven Dwarfs" in mime, taught by Miss Sue Kaplan, to music provided by three parents. The hand work done by the older children in their kindergarten class was on view and was much admired.

Attendances : full day	...	...	12,958
mornings	...	...	4,892
casuals	...	...	1,314

Infectious Diseases :—Chickenpox 22; Tonsilitis 3; Conjunctivitis 1; Impetigo 1.

The waiting list for admittance is as follows :—

Full day	...	70
Mornings	...	29

Section 14

ASIAN MATERNITY AND CHILD WELFARE

With the rejoicings of Jubilee Year behind us, the Asian Maternity and Child Welfare Department has begun the second half of the century with a year of hard and satisfying work and a record of continued progress.

Buildings

The work of the Department has been carried out from the same four clinics as in former years :—

Ngara Clinic is satisfactory in layout and ideally situated adjoining the Indian Maternity Hospital, but the building is too small for the numbers now attending the clinic sessions and extension is urgent. The prospect of building afresh on another site is not wholly welcome, and tentative proposals have been put forward for an agreement with the Lady Grigg Welfare League which would permit expansion on the present site

Pangani Clinic is being replaced at last ! The new building, on a convenient plot in Eastleigh Section I, was begun in September and well advanced by the end of the year.

Sandiford Road Clinic is adequate for the limited area which it serves, but work there was hampered throughout the year by shortage of water. E.A.R. and H. have been approached to provide a water storage tank.

Victoria Street Clinic has now been in operation for over a year, and is perfectly satisfactory in every way, a joy to work in and the prototype for future clinics. The new Eastleigh clinic is being built on substantially the same plan.

Staff

Dr. Philippa Gaffikin continued as Medical Officer throughout the year.

Miss Priscilla Benjamin continued to carry out the duties of Supervisor of Health Visitors, Midwives and Dais until 9th December, when she completed her third tour of duty and left for India on long leave. Her work as always was of the highest standard and it is an appropriate moment to record our appreciation of her continuing devotion to duty : she is the mainstay of the Department.

Miss Elisabeth de Mello was in charge of Victoria Street Clinic throughout the year, and also carried out the duties of Supervisor of Midwives and Dais from 9th December onwards.

Mrs. Savitri Chaddah remained in charge of Pangani Clinic throughout the year and Mrs. M. R. Pachecos in charge of Sandiford Road Clinic.

Mrs. Narinder Kaur Nayer was in charge of Ngara Clinic throughout the year, and also took over the supervision of stores and of African staff from 9th December.

Miss Kursheed Begum Ramzan, the only Health Visitor on the permanent staff, worked at Victoria Street Clinic until 31st August, when she completed her tour and proceeded on long leave.

The other seven Health Assistant posts, all on temporary terms, were filled as under :—

Mrs. Raj Rani Verma — January to May 31st.

Mrs. Swaran Kaur Pallan — June to end of year.

Mrs. Mohinder Kaur Bhagwant Singh — throughout the year.

Miss Jaswant Kaur Sham Singh (now Mrs. Jagat Singh) — January to 31st July, and October to end of year : two months unpaid leave, August and September, during which she got married.

Miss Joginder Kaur Kesa Singh — August and September.

Miss Amtul Rashid Bhatti — throughout the year.

Miss Noorjehan Madatali — throughout the year.

Mrs. Labh Kunwer Ben Chudgar — January to 15th October, when she went on indefinite unpaid leave.

Mrs. Santosh Kumari Gautam — 9th November to 30th November.

Mrs. Inder Kaur Gurdial Singh — January to 20th March.

It will be seen that changes of staff in the Health Assistant grade were very frequent, which militates against satisfactory working of the Clinics, and in the latter part of the year there was considerable difficulty in filling vacancies. Particularly in the last quarter the Department was chronically understaffed.

Training

The Course of Training for the Diploma in Health Visiting, begun in September 1950, came to an end in the last week of October when the final examinations were conducted by an Examining Board nominated by the Kenya Medical Department and the Public Health Department. All four students satisfied the examiners, and the Chairman of the Public Health Committee (Councillor Norman Harris) presented Diplomas to Miss Shirin Habib Noormohammed, Miss Joginder Kaur Gabri, Miss Florie da Cruz and Miss Mohinder Kaur Sat Bachan Singh.

A Refresher Course for Midwives — attended also by Health Visitors — was held at Ngara Clinic from 19th November to 4th December. The organisation of the Course was largely undertaken by the Deputy Medical Officer of Health, who arranged lectures, study tours and cinema shows on midwifery and related subjects, Miss Benjamin acting as interpreter throughout. The response from the Midwives was exceedingly good. It was apparent that they appreciated the interest shown in their professional welfare, and the attendance was almost 100%. It is hoped to make this course an annual event.

Much gratitude is due to the many helpful people who gave time and effort to assist these ventures in Health Education.

Dais' Classes were held weekly throughout the year at Ngara Clinic, so that the Dais might be kept up-to-date in their methods and constantly in touch with the Supervisor. Two women who had been unable to complete the Dais' Course in former years finally did so in 1951 and both passed the examination for the Trained Dai Certificate.

A Course in Home Nursing, more advanced than that which is taught to the public, was held by Miss de Mello for the Health Assistants.

Clinic Activities

The general pattern of Clinic activities is now established on the lines laid down in former years — a firm basis for future development yet not so rigidly set as to preclude modifications in the light of experience or to close the door against new trends in thought and practice.

Antenatal Welfare. Antenatal sessions were held weekly at each Clinic, and there were 4,817 attendances during the year — a small decline compared to 1950 which is largely attributable to the exceptionally heavy and prolonged rain. Of abnormalities detected in these patients, simple microcytic anaemia continued to head the list and the rate was slightly higher than last year, 966 cases giving an incidence of 66.9%. There were 43 cases of pre-eclamptic toxæmia, of which one went on to eclampsia but made a satisfactory recovery. The maternal death-rate showed a small decline, there being five deaths attributable to pregnancy as against seven last year. The causes of death were :—

Heart failure	...	...	...	2
Obstetric Shock	...	...	...	1
Postpartum haemorrhage	...	...	...	1
Cerebral malaria	...	...	...	1

None of these women had been clinic attenders.

Child Welfare. Child Welfare sessions were held weekly at each of the four Clinics, and the total attendance was 11,844 — a gratifying response to an extra effort in this field. Attendance by families has become the rule — “let ’em all come” instead of only the baby; and it is very pleasant to watch healthy growing families — growing both in numbers and in stature — coming regularly year after year.

Four years’ experience has amply demonstrated the wisdom of the modern ‘early solids’ principle in infant feeding. and this policy is being pressed. Breast feeding is of course the basic essential, but mothers are advised to give **in addition** cereal from the age of 6 weeks, puree of vegetable from 8 weeks, egg (if the religious principles will permit) somewhere in the 4th month, and so to animal protein between 6 and 8 months. Breast feeding is continued for 6 to 9 months; and when the breast supply ceases the mother finds her child already well established on mixed feeding, there is no longer that appalling battle to induce the wholly breast-fed child to accept other foods nor — more important — the drop in weight and condition that used to accompany weaning.

There was no marked epidemic disease during 1951, though there was a considerable incidence of mumps, measles and whooping cough in the final three months. A small number of cases of typhoid occurred in October and November — and had an excellent propaganda effect in the drive for TAB immunisation !

Home Visiting. The campaign for health and hygiene in the home. the foundation of all good welfare work, was vigorously conducted during the year and the total of visits paid was 11,780. Of this total, 7,250 visits were by Health Visitors, 5,530 by Health Assistants. Although the Health Assistants have always given excellent service to the Department, they are not and cannot become trained personnel. Now that trained

Health Visitors are available in Kenya it is felt that better service could be given to the public — and greater authority to the Department's voice in health matters — by the employment of qualified staff only. A change in the establishment is envisaged for 1952, whereby some at any rate of the Health Assistant posts will be abolished in favour of a less number of Health Visitor posts: fewer pairs of hands but trained minds behind them, a further extension of the principle of quality rather than quantity.

Inoculations and Vaccinations. Immunisation against a known disease is an obvious and easily understood form of preventive medicine of which the Nairobi public is now fully aware, and the Asian community took full advantage in 1951 of the facilities provided.

Health Education. Particular emphasis has always been placed on antenatal and postnatal exercises, which are of real value in promoting safe and easy labour and a rapid return afterwards to full physical fitness. Classes in these exercises were held weekly at all Clinics. Classes and demonstrations were also held each week in First Aid; Home Nursing; Sewing and Knitting and the Preparations of Layettes; and demonstrations in cooking for toddlers were given once or twice in each month. The First Aid and Home Nursing classes were arranged as in former years to follow the syllabus of the St. John Ambulance Association and lead up to their Certificates — a strong incentive to regular attendance.

Co-operation with Outside Bodies. Relations between the Department and the general practitioners followed the same pleasant pattern as in former years, and a total of 364 cases were referred to the Medical Officer for examination and opinion.

It is pleasant to record that there has been a real improvement in the relations with midwives in Nairobi — and that without any greater force than moral suasion, for the By-laws to regulate the practice of midwifery, though drafted, have not yet been passed. Notification of births still left a good deal to be desired, but was better than in 1950; so also was record-keeping; and a large number of midwives are now bringing their cases regularly to the Clinics. Several enterprising midwives have opened private Maternity Homes, and under the Nursing and Maternity Homes By-laws these have been inspected at regular intervals. On the whole the recommendations made at these visits have been carried out, and there is evidence of a real effort to achieve and maintain modern standards of hygiene.

Under the constant tutelage of the Supervisor and Health Visitors, the Dais practising in Nairobi have developed a considerable sense of responsibility; and they co-operated readily throughout the year, notifying cases and bringing patients to the Clinics.

A special vote of thanks is due to the Matron and Assistant Matron of the Indian Maternity Hospital for their continued helpfulness, particularly in providing practical experience in midwifery for the student Health Visitors. During the year the Medical Officer was invited to become a member of the Hospital's Management Committee, and it is hoped that this closer association will be of value to both Hospital and Welfare Department especially in the field of training.

General Remarks

1951 was an exceptionally wet year — and **not** noteworthy for an epidemic of malaria, thanks to the Department of Insect-borne Disease — but the continued cold and damp brought the usual train of respiratory infections and was responsible for a good deal of morbidity though fortunately not much mortality. The general level of health, as indicated by an Infant Mortality Rate of 70.7 per thousand live births, is very much the same as last year — which indeed is an achievement, considering the increasingly hostile environment against which health must be maintained. There was a steep rise in the cost of living and overcrowding has reached slum level. The basic essentials of life — food, clothing and shelter — were all harder to obtain than in 1950. Only in the well-being of the newborn was a definite improvement noted, the stillbirth rate falling from 33.8 per thousand births in 1950 to 28.4 per thousand in 1951. This probably reflects an improvement in domiciliary midwifery. There are more midwives in practice, their standard of training and competence is rising albeit slowly, and the public is increasingly aware of the value of professional as opposed to traditional knowledge.

STATISTICAL RECORD

ASIAN MATERNITY AND CHILD WELFARE CLINICS

TABLE 33

Ante-Natal Clinics

			Ngara	Pangani	Sandiford Road	Victoria Street	Total
Clinics Held	...	...	51	51	48	52	—
Attendances	...	...	1 686	1,623	442	1,066	4,817
New Registrations	...	...	532	534	98	280	1,444

Child Welfare

			Ngara	Pangani	Sandiford Road	Victoria Street	Total
Clinics Held	...	...	51	50	48	51	
Attendances	...	...	3,955	3,857	1,537	2,495	11,844
New Registrations :							
O — 1 year	...	...	495	457	97	243	1,292
1 — 5 years	...	...	323	585	50	193	1,151

Home Visits

			Ngara	Pangani	Sandiford Road	Victoria Street	Total
Supervisor	...	...	539	—	—	—)
Health Visitors	...	...	787	1,918	2,389	1,047)
Health Assistants	...	...	1,144	1,914	207	1,265	) 11,780
Supervisor with Students			570	—	—	—)

TABLE 34

Inoculations and Vaccinations

			Ngara	Pangani	Sandiford Road	Victoria Street	Total
Vaccination	...	...	474	506	135	334	14,52
T.A.B.	...	...	310	639	5	123	1,077
Diphtheria Anti-toxin	...		67	39	5	1	112
Other	74	22	37	4	137

Minor Treatments

Minor Treatments	...		271	264	236	234	1,005
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TABLE 35

Comparatives Figures — 5-year Period

		1947	1948	1949	1950	1951
Antenatal Clinics —						
Attendances	...	4,021	6,715	4,560	5,126	7,817
New Registrations	...	1,032	1,504	1,410	1,490	1,444
Child Welfare Clinics —						
Attendances	...	5,311	9,691	9,004	9,455	11,844
New Registrations :						
0 — 1 year	...	—	1,101	1,103	1,083	1,292
1 — 5 years	...	—	862	1,128	896	1,151
Home Visits	...	—	9,977	10,632	9,037	11,780

TABLE 36

Notification of Births

Indian Maternity Hospital	Midwives and Dais	Total
662	2,884	3,546
Births known to have occurred, but not notified	...	300
		3,846
	Less stillbirths	99
	Live births	3,747
Deaths at under 1 year (including stillbirths)	...	265
Infant Mortality Rate 70.7 per thousand.		

Causes of Stillbirths

Cause	Number
Prematurity	18
Stillborn macerated	4
Antepartum haemorrhage	4
Asphyxia neonatorum	3
Maternal Causes	5
Prolonged labour	3
Anencephalus	1
Abnormal presentation and position	7
Natural Causes	1
Hydrocephalus	1
Prenatal causes	2
Hydramnios	1
Premature separation of placenta	1
Cause not known	48
Total	99

Causes of Death, Children under Five Years

Cause				Under 1 year	1 — 5 years
Asphyxia Neonatorum	...	...		3	—
Birth Injuries	...	...	...	1	—
Burns	...	...	...	2	1
Bronchitis	...	...	...	2	—
Cerebral haemorrhage	...	...		2	1
Cirrhosis of Liver	...	...	...	—	1
Cardiac failure	...	...	...	—	2
Convulsions	...	...	...	1	—
Cholaemia	..	...	...	1	—
Cervical Infection	..	..	...	1	—
Cachexia	...	...	...	—	1
Diarrhoea	...	...	...	10	7
Encephalitis	...	...	...	1	—
Gastro-enteritis	...	...	...	12	5
Glomerular Nephritis	...	...	...	—	1
General Debility	...	...	...	1	—
Heart Failure	...	...	...	19	4
Hydrocephalus	...	...	...	1	—
Intracranial Haemorrhage	...	...		—	2
Infantile Cirrhosis	...	...	...	—	1
Intestinal Obstruction	...	...		1	—
Jaundice	...	...	...	1	—
Malnutrition	...	...	...	7	1
Marasmus	...	...	...	3	—
Meningitis (Tuberculous)	...	...		1	3
Malaria	...	...	...	2	1
Pneumonia	...	...	...	31	12
Prematurity	...	...	...	50	—
Poliomyelitis	...	...	...	—	1
Pleural Effusion	...	...	...	1	—
Oedema of Lungs	...	...	...	1	—
Respiratory Failure	...	...	...	8	1
Rh. Factor	...	...	...	1	—
Syphilis	...	...	...	1	—
Thrombophlebitis	...	...	...	1	—
Toxaemia	...	...	...	—	1
Thrombocytopaenic purpura	...	...		—	1
Tuberculosis	...	...	...	—	1
Total	...			166	48

Section 15

AFRICAN CHILD WELFARE**Staff**

European. Dr. J. A. T. Henry was on duty as M.O. i/c. throughout the year. The total number of medical examinations done by her was 11,668, giving in itself the information that there is little time available in working hours for planning of future policy and administration and teaching. It is hoped that some way may be found of providing assistance by using part of the time of a medical officer attached to the African Maternity Hospital.

Mrs. Dugmore, Supervisor of Health Visitors and District Midwives has done a magnificent job throughout the year and no department could hope to have a supervisor with more vision and inspiration in planning for the future and the ability and energy to see it implemented. The new policy, implemented on January 1st, to reduce European supervision and, out of this saving in salaries, to increase the African Staff to cover two more urgently required centres, has proved satisfactory; but, the increase in Welfare Centres, District Midwives and domiciliary deliveries has increased the duties of the Supervisor to the extent that it is now necessary to consider the appointment of a Supervisor of Midwives. It is this section of the present Supervisor's duties which is increasing so rapidly.

In 1949 there were three District Midwives, who took 189 calls.

In 1951 there were five District Midwives, who took 450 calls.

With 160 days of the year spent on relief duties, the regular inspection of midwives' houses, bags and surgical equipment plus visits to the houses where a midwife was in attendance were inadequate and if this is allowed to continue it will inevitably lead to a lowering of the present standard. From January 1952 there will be six district midwives operating in the African Housing Estates and the rapid expansion of African housing will almost certainly call for another two before the end of the year with a possible future total of more than 600 deliveries. It is urged that a Supervisor of District Midwives should be appointed not later than January 1953. As she and the midwives could not work other than in close co-operation with the ante-natal clinics held in the Child Welfare Centres the control of the domiciliary midwifery would remain with the Medical Officer i/c. of Maternity and Child Welfare. This would have the additional advantage that, if she and the Supervisor of Health Visitors had adjacent headquarters and worked in close co-operation, they could undertake each other's relief duties for local leave and possible sickness.

Mrs. Gibb returned to duty from overseas leave on January 11th and has been Health Visitor at Muthuruwa throughout the year.

Mrs. Taylor relinquished her appointment on the temporary staff when Mrs. Gibb returned and we all hoped that she would come back to work for us again some day.

Mrs. Pickwell was Health Visitor at Makongeni and we are very indebted to her for the amount of training she did with the African assistants in addition to the excellent job done by her in the clinic and the homes throughout the estate. For family reasons she resigned with

effect from 31st December. We are exceedingly sorry to lose her and wish her prosperity and success.

Mrs. Brooks was Health Visitor in charge of Kaloleni and Bahati and Mrs. Davis in charge of Pumwani and Kariakor. These Health Visitors have carried out the policy of supervising two clinics with African assistants, who are certificated midwives, under them. The test period has justified our faith in the plan.

The health record was good; 73 days were lost due to sickness, and no unpaid leave was taken.

African. The senior clinic assistants responded to their increased responsibilities well but there is a problem arising with the junior assistant, from whom we demand on appointment a certain standard of literacy and at least a year's experience in a Government Hospital. Every year more married women with higher standards of education attend clinics and the junior clinic assistant is falling short in teaching these young mothers. Should the routine dispensary work be removed from the clinics it would seem advisable to recast the establishment within the salary vote and aim at improving the quality and reducing the quantity of assistants.

With no overcrowding in the African Maternity Hospital and a wider range of ante-natal and post-natal sick cases being admitted a higher standard of midwife will become available. This will automatically require a higher standard of clinic assistant, who will require a Health Visitors' training course, i.e. a course supplementary to general training and midwifery certificates, as in the U.K. There are many improvements required on the teaching side of the Child Welfare Centres and these are dependent on the quality of the African Clinic Staff. With the Kenya Nursing Council helping to organise regulations within the training schools it would be a misfortune to lower the standards in order to hasten production of an African Health Visitor, who would only form the basis for future sad anomalies.

Due to sickness 281 days were lost.

Leave without pay, mainly maternity leave, accounted for 189 days.

Review of Activities.

The P.W.D. have lent a double house in Bahati and the Clinic was opened there on March 1st.

Unfortunately the additional clinic planned for Maesha has not been built, but we hope it will operate early in 1952, as it is required urgently to relieve the congestion in the present Makongeni Clinic.

A teaching unit has been organised to move to each clinic in rotation and it is hoped that specially trained staff may be available for this important work. The film strip projector allows for demonstration with repetitive instruction and classes on diet and the care of the baby are given in courses, ending with an examination, to groups of women, the literate students being given time to make notes.

Personal contacts with fathers is on the increase and quite a number of new comers to the districts have interviewed the Health Visitors in response to a written invitation, which the men can show to their employers in order to be excused from duty. Also, publications were put into the vernacular press to tell the men more about the type of work being done in the clinics and how the staff are pleased to co-operate in referring sick women and children to General Practitioners or to the Government Dispensaries and Consultant services with the information gained from investigations already undertaken. It is difficult for them to understand how gladly we should relinquish the curative side of medical work in order to concentrate on preventive medicine and the teaching of positive health. The Supervisor of Health Visitors and Midwives gave a lecture in October to the Pumwani African Library Club about African Child Welfare and from the discussion following it was clear that more time must be spent in teaching the population what we are trying to do in our work, i.e. the day for expecting blind obedience to our requests is past and co-operation will come only when the men and women understand.

The clinic staffs assisted Miss Deverell, the Assistant Welfare Officer, to complete social questionnaires about the pre-school child age group, along the lines of the interesting one completed by her for the school age group in 1950.

The total money collected for medicine throughout the year was Shs. 6,463/50 cts.

Ante-Natal Clinics

The total number of new cases for all clinics was 2,098, with total attendances 5,448. The former showed an increase of 363 over 1950.

There is still difficulty, especially in the housing near the A.M.H. in preventing the women from attending for examinations at the hospital as well as the A.C.W. clinics. This became more obvious when admissions to the African Maternity Hospital were regulated. There is no doubt that this control of admissions has been of great medical benefit to the African patient and has removed a load of worry from the Health Visitors, who now know which cases are her responsibility to the end of the puerperium.

There are now hospital beds available for those whose living conditions are unsuitable for a home delivery and there is the assurance that they will be able to occupy such beds for a safe period. It is also possible for the hospital to admit disorders of pregnancy and thus avoid having to transport these cases from King George VI Hospital when labour commences.

Post-natal attendances are improving slowly and average 50% over all clinics. The speedy return of mothers to their shambas after delivery gives a wrong impression of the women's unwillingness to co-operate.

Child Welfare Clinics

The year ended with each clinic having a Christmas party in December. The most successful, at which some children from the Government African School danced, was the combined one at Kaloleni for the mothers and children of the Kaloleni and Bahati clinics. The dancers were taught by Mrs. Fischer. It was interesting to have the opportunity

of seeing what can be achieved by these children under skilled tuition and we were very grateful for such a pleasant entertainment.

Infant Welfare new cases were 1,888; an increase of 312 over 1950.

Pre-school new cases were 2,283; an increase of 452 over 1950.

Total attendances were 37,673; an increase of 3,875 over 1950.

Greater emphasis has been put on general examination of the children and teaching the mothers about the care of the child and his diet, rather than weighing the child at every attendance. At first the mothers did not understand that at toddler age weekly weighings are not necessary, except in sick children, but now the women are beginning to appreciate the more personal inspections and talks by the Health Visitor and the assistants.

Attendances at milk bars showed a total of 20,410, and although the total quantity of milk is small from a nutritional aspect it is useful in teaching the weaning-age child to drink milk and is of value in treating a few convalescent children.

We hoped that in order to continue the sale of milk towards the end of the month the Nairobi City Council were going to institute sale of books of milk tickets, but this idea, which would lessen the end of month wastage as well as increase consumption, seems to be hanging fire.

Dispensary attendances show a marked increase and total 78,274 compared with 43,262 in 1950, thus reflecting the great amount of sickness there has been throughout the year.

The total number of home visits was 27,094, an increase of 6,683.

The clinic teaching and home teaching should supplement each other and the following subjects are those on which the staffs work :—

Demonstration Classes at the clinic :—

- Cinema shows on suitable diet.
- Breast feeding.
- Bathing of infant.
- Use of flit and gammexane.
- Food cupboard and food storage.
- Use of latrine.

More individual tuition in clinic at weighing session :—

- Clothing for children.
- Weaning and balanced diet.
- Care of teeth.
- Personal hygiene.
- Regular attendance at clinic for inspection, advice and medicine.
- Care of sick children.

Home Visits :—

- Bathing of infants.
- Breast feeding.

Flit and gammexane.
 Cleanliness of home.
 Hygiene for children and clothing.
 Weaning and suitable diets.
 Personal hygiene and ante-natal care.
 Clinic attendances.
 V.D.C. attendances.
 Introducing new families to the Clinic services.
 Checking up defaulters.
 Storage of food.
 Cleanliness of latrines and proper use.
 Sleeping facilities.
 Arrangements for home delivery of ante-natal cases.

Medical Aspects

Municipal Nursery School children were examined during the year. We are glad to report on the co-operation of the Principal of the Government African School, Pumwani, the school medical officer and the school sister in using clinic and nursery school medical records and recommendations when they were considering admissions to school at the beginning of the new session. We hope to be of increasing help to the mothers of our children and the school authorities in the future.

Throughout the year measles and whooping-cough occurred and in the latter months mumps and a few cases of chickenpox.

Respiratory infections and gastro-enteritis were almost continuous and we were disappointed when the treatment (in one of our clinics) of the many ear cases by the Government doctor was not possible. Mothers find it difficult to take their children to the E. N. and T. Clinic for the long periods of daily treatment required. Although unable to quote figures, we are of the opinion that eye and skin infections are decreasing, though they still occur in large numbers.

There is much evidence of protein deficiency in the children's diet and of chronic poor health in many instances due to repeated attacks of malaria and helminthic infections.

1,069 cases of malaria were treated in the clinics during the last six months of the year.

360 cases of helminthic infections were treated for the same period.

No. of vaccinations done in the year was ... 2,990

No. of inoculations for T.A.B. in the year was ... 2,674

These injections are often withheld because of the poor condition of the children.

Laboratory Tests

No. of Kahn specimens examined	2,006	positive	197
No. of cervical smears examined	1,947	positive for G.C.	40
No. of blood slides for malaria	8,019	positive	1,601
No. of stools for helminths	2,883	positive	1,117

The general interest in and standard of sanitation reports and housing reports has been maintained, and have been forwarded to the Medical Officer of Health monthly.

The increase in housing and its distribution show that attention must be paid to planning for future clinics and it is suggested that a conference representing the Town Planning Department and the African Child Welfare side of the Public Health Department would be advisable in order to clarify many of the problems which can be foreseen.

The change in the character of the population in Pumwani has raised the question of transferring this clinic to one of the newer estates. The people can be divided into two main groups: A. the rich who prefer private doctors and do not wish to be taught in their homes, and B. the casual population, living in grossly overcrowded quarters, who wish the clinic to run a dispensary service only, and who return to the Reserves so frequently that there is no opportunity to teach them. This matter of transfer is still under consideration.

Clinic Buildings are in good condition and the change to cream oil paint in Kariakor, Pumwani and Kaloleni from dark green has been a great improvement.

TABLE 37

Report on Deliveries by Municipal District Midwives, 1951

	Total Calls	Normal Live ch.	Normal Dead ch.	Abn. Live ch.	Abn. Dead ch.	To A.M.H.
Ziwani	144	136	1	4	—	2
Makongeni	112	103	2	—	—	7
Kaloleni	137	129	2	2	1	3
Bahati	53	47	—	—	—	4
Starehe	23	22	—	—	—	—
TOTALS	469	437	5	6	1	16

Ziwani. For one call the woman had barely started labour and the husband later took the patient elsewhere.

Normal with dead child	1. —	only 7½ months' pregnancy.	
Abnormal with live child	4. —	breach delivery	2.
		prolapsed cord	2.
B. B. A.	4.		
Infant deaths	3. —	intracranial haemorrhage	1.
		toxaemia of pregnancy	1.
		prematurity	1.

Makongeni. Normal with dead child—2. B.B.A. ? cause—1.

Midwife called too late—1.

B.B.A. — 9. Nyanza Province women will not call when labour starts.

Infant deaths — 2. Prematurity — 1.

Congenital deformity — 1.

Kaloleni.	Normal with dead child — 2.	Macerated foetus 1.
		Prematurity 1.
	Abnormal with live child--2	Breech 1.
		P.U.I. with hydramnios 1.
	B.B.A. — 4.	
	Infant deaths — nil.	
	Twin pregnancy — 1.	
	one call was from a woman with an ante-partum haemorrhage whose condition was so serious that the midwife took her to King George VI Hospital immediately.	
Bahati.	1 call to a threatened abortion.	
	1 changed her mind after calling midwife.	
	B.B.A. — 2.	
	Infant deaths — 1. Maternal anaemia.	
Starehe.	Infant deaths — 1. Prematurity.	

Report per District

Ziwani. Mrs. Ruth Elikana, Ziwani 378, carried out her duties in this area throughout the year. At the end of September her average of cases was 11 per month and calls to other cases were coming in when she was otherwise engaged. It was therefore considered that the time had come to subdivide this district and license another midwife. This was done on October 1st.

Starehe. Mrs. Annah Norman, B.B.20/21 Pumwani, was allocated a house on the boundary of Pumwani and Starehe from October 1st and operates in these two areas. Calls from Pumwani are few. With the exception of Bondeni and certain quarters in Gorofani the houses are unsuitable for home deliveries and the wealthy Mohammedans either prefer an untrained midwife of their own family or call an Indian midwife of their own religion.

In Starehe the more senior government employees seem to feel that as they live so near to the African Maternity Hospital they should have the right to use it as a nursing home if they find it more convenient. I think that with a supervisor, who could pay more visits to their homes when the midwife is in attendance, the residents would take more kindly to the control of admissions to the maternity hospital.

Makongeni. Mrs. Naomi William was the midwife in this area till February 26th. She was an excellent midwife but for private reasons had to leave Nairobi. A government post was found for her at Meru and she was replaced by Mrs. Njoki Ruben, who continued to the end of the year.

It had become increasingly evident throughout the year that the fact that the midwife was accommodated in quarters of the "landi" type caused the higher grade railway employees to regard the midwife as a social inferior. After discussion with the Railway Welfare Officer she was moved to a more senior quarter, Cottage 7-D., and since then there appears to have been a marked improvement in social relations.

Kaloleni. Mrs. Teresia Joseph operated in this area until March 20th when she was transferred to Bahati F.61. She was replaced by Mrs. Rahel Mutia to the end of the year.

Bahati. There was no midwife in this area till March 20th, a short time after the clinic was opened in this estate. Mrs. Teresia Ruben remained here until May 9th when she was discharged because of unsatisfactory work. Until August 1st when Mrs. Delina Heron replaced her calls for this area were taken by the midwives at Kaloleni and Makongeni.

Muthuruwa. In this estate there has never been any response to midwives posted previously. They were therefore withdrawn; but the few women, who might be interested, were told that they could call on the midwife in Kaloleni. Their numbers were very few until the control of admissions to the African Maternity Hospital when they increased slightly.

After discussion with the Railway authorities and with their promise of concentrated propaganda among the husbands it was decided that they would put a two-roomed house at the disposal of a midwife with effect from 1st January, 1952.

TABLE 38
African Child Welfare — 1951

	Pumwani	Karia- kor	Kalo- leni	Makon- geni	Muthu- ruwa	Bahati (10 mths. only)	1944	1945	1946	1947	1948	1949	1950	1951
Ante-Natal														
New Cases	428	410	343	337	308	272	470	536	771	1,184	1,178	1,379	1,735	2,098
Births at home	53	88	119	88	79	64	282	337	282	422	475	428	382	491
Births at Hospital	71	46	24	20	57	13	—	—	—	276	326	332	226	231
Total attendances	822	992	951	951	1,177	555	3,312	2,567	3,664	4,637	4,932	5,148	5,634	5,448
Infant Welfare														
0 — 1 New Cases	307	329	315	332	297	308	748	1,226	1,352	1,492	2,262	1,475	1,576	1,888
0 — 1 Transfer to														
P.S. Register	44	38	90	72	89	30	—	—	—	247	346	397	343	363
1 — 5 New Cases	328	297	401	456	355	446	934	1,353	1,018	1,337	1,387	1,194	1,831	2,283
Total attendances	5,042	6,556	6,829	5,995	9,263	3,988	40,820	39,518	33,949	33,823	32,195	29,023	33,798	37,673
Home Visits														
By Health Visitor	933	1,069	545	1,241	926	37	9,212	6,612	10,384	9,292	6,712	5,278	5,012	4,751
By African Assistants	2,225	2,911	3,573	6,613	4,113	2,908	10,218	10,140	11,054	15,158	16,130	15,865	15,399	22,343
Total Visits	3,158	3,980	4,118	7,854	5,039	2,945	19,430	16,752	21,438	24,450	22,842	21,143	20,411	27,094
Dispensary														
Women—(New	429	477	352	420	330	285	—	—	—	4,846	7,229	4,867	6,499	(2,293
(Repeat	2,053	2,719	2,549	2,702	2,660	1,255								(13,938
Child —(New	950	1,150	1,584	2,066	1,447	1,144	—	—	—	27,927	33,861	26,163	36,763	(8,341
(Repeat	3,578	5,935	11,943	14,898	8,663	8,685								(53,702
Total attendances	7,010	10,281	16,428	20,086	13,100	11,369	23,336	7,002	12,850	32,773	41,090	31,030	43,262	78,274

Section 16**AFRICAN MATERNITY HOSPITAL****Staff**

The year 1951 opened without a Medical Superintendent since Dr. Williams who had been at the hospital nearly eight years resigned to take a post up-country. This was a great blow to the hospital since Dr. Williams, in addition to being very popular with both the European Staff and the Trainees instilled great confidence in her patients. No permanent Medical Superintendent was appointed to take her place at that time but Dr. Darling kindly stepped in to fill the vacancy in a temporary capacity. Her help and service to the Hospital during this time were much appreciated by all.

During the greater part of the year the Hospital was working under great difficulties from the point of view of European Sister Staff. It was not until November that the establishment of sisters was at full strength. Sister Weizbart left at the end of 1950; Mrs. Sidney, to whom thanks are here expressed for acting as Matron for six months, retired at the end of March when Miss Foord returned from long leave. Sister Harper resigned in June and Mrs. Spencer, the Welfare Worker, in July. Sister Greening joined the permanent staff in July and when Sisters Dick and Sanctuary came to Hospital in November, both on the permanent staff, the establishment was once more at full strength.

Sister Sanctuary is filling the post of Home Sister and thus, for the first time, a fully qualified person is supervising the Trainees.

Dr. Elizabeth Weller is to take up the post of Resident Medical Officer from 1st January, 1952.

Trainees

Training of personnel has continued during the year and 20 nurses passed the final Government Examination.

The Kenya Nursing Council have ruled that it will be necessary in future for all trainees to have passed the Kenya African Preliminary Examination, consequently, from January 1952 all teaching will be done in English. The curriculum will also be more strenuous, but 24 girls a year will still be accepted for training.

General Work

At the beginning of the year staffing difficulties were added to by admissions which were much greater than normal. Regrettably patients had to be discharged on the third day to leave room for new admissions. However, by this we were better able to augment the policy of having all normal cases delivered at home by our home domiciliary midwives. This is a wise policy but not altogether a popular one for it is difficult to persuade patients that this is a suitable way of having their babies. If home conditions are unsuitable normal cases are accepted by the hospital.

It is worthy of note that on the whole the weights of babies at birth are increasing. The average during the year was $6\frac{1}{2}$ lbs. to $7\frac{1}{2}$ lbs., whereas four years ago it was $5\frac{1}{2}$ lbs. to $6\frac{1}{2}$ lbs. It is probable that this is due to improved feeding of the parents. On the other hand the infant

death and still birth date due to prematurity and malnutrition still emphasises the fact that illness and malnutrition are very prevalent among many of the women, especially those coming from up-country districts. There were fewer mothers brought into the hospital in extremis and with difficult labours than in previous years. This has reduced the number of craniotomies and Caesarean operations as it enabled early and better treatment to be given to the patients. The main cause of maternal deaths was haemorrhage which had begun before admission and there was little that could be done after admission of the patient.

Fees

On June 20th the Mayor, Councillor N. Harris, laid the foundation stone of the new hospital, and progress has been rapid since then. The new hospital will be opened early next year. This building along with new Sisters' Quarters and better accommodation for the Nurses are urgently needed for the staff to carry on its work efficiently, and with the promise that both the hospital and the staff quarters will be ready at the beginning of the new year we look forward to having even better work under these very much improved conditions.

TABLE 39

Hospital Statistics

Total Admissions	...	...	...	...	2,715
Births	...	...	...	...	2,387
Still-Births	...	...	...	...	158
Maternal Deaths	...	...	...	...	8
Infant Deaths	...	...	...	...	140
Operation (including forceps)	...	...	...	...	95
B.B.A.	...	...	...	...	122
Abnormal Presentations	...	...	...	...	143
Twins	...	...	...	...	45
Ante-Natal Clinics : No. held	...	...	...	...	204
Attendances	...	...	...	...	11,247
Post-Natal Clinics : N. held	...	...	...	...	48
Attendances	...	...	...	...	686
No. in hospital on the first day of the year					48
Admissions :—					
Resident	...	...	...	...	1,613
Non-Resident	...	...	...	...	1,102
Total	...	...	...	...	2,715
Discharges	...	...	...	...	2,531
No. in hospital on the last day of the year					39
Patient days — 13,678					
Baby days — 12,584					
Motherless baby days — 535					

Admission by Districts

Nairobi	1,613	Mangu	24	Kiambu	102	Thika	44
Kabete	440	Limuru	33	Ngong	41	Machakos	28
Forthall	87	Nyeri	38	Karatina	3	Ruaraka	29
Embu	6	Langata	40	Dandora	10	Mombasa	1
Dagoretti	40	Kikuyu	15	Kui	4	Kahawa	13
Makindu	1	Ruiru	31	Athi River	6	Kibera	12
Jinja	1	Naivasha	6	Karen	3	Kajunda	1
Sagana	1	Kijabe	4	Tumu Tumu	2	Maji ya Moto	1
Maji Mazuri	1	Eldoret	1	Kwanza	1	Uplands	7
Daragani	1	Kajiado	3	Longonot	2	Gilgil	1
Karuru	5	Magadi	1	Embakasi	1	Kisumu	4
Mbagathi	3	Kinangop	1	Narok	1	Email	1
Kilimanjaro	1						

Admission by Tribes

	Clinic	Direct	Total
Kikuyu ...	1,268	352	1,620
Luo ...	392	65	457
Other tribes ...	509	129	638
Births ...	1,958	429	2,387
Still-Births ...	104	54	158
Born before Arrival			
	Clinic	Direct	Total
Born before arrival ...	75	47	122
Malpresentations ...	99	44	143
Twins ...	33	12	45

TABLE 40
Still Births and Causes

	Clinic	Direct	Total
Anencephalic ...	1	0	1
Ante-Partum Haemorrhage	3	0	3
Asphyxia ...	2	1	3
Atelectasis ...	2	0	2
Birth Injuries ...	8	2	10
B.B.A. ...	1	0	1
Breech with delay of head	1	0	1
Cause unknown ...	2	1	3
Cerebral Haemorrhage ...	0	1	1
Cord around neck ...	1	0	1
Debility of mother ...	0	3	3
Delayed labour ...	9	10	10
Hydramnios ...	1	0	1
Hydrocephalus ...	0	2	2
Macerated Foetus ...	21	11	32
Monster ...	1	0	1
Obstructed labour ...	12	4	16
Placenta Praevia ...	2	1	3
Prematurity ...	16	12	28
Prolapsed Cord ...	8	3	11
Syphilis, congenital ...	11	2	13
Toxaemia of mother ...	2	1	3
Total ...	104	54	158

Infant Deaths and Causes

		Clinic	Direct	Total
Asphyxia	...	4	1	5
Atelectasis	...	3	1	4
Birth Injuries	...	2	2	4
Cause unknown	...	1	4	5
Cerebral Haemorrhage	...	5	0	5
Cerebral Injuries	...	5	1	6
Delayed labour	...	2	0	2
Embolus	...	1	0	1
Enteritis	...	2	1	3
Heart disease, congenital	...	2	0	2
Malaria, cerebral	...	0	1	1
Malnutrition	...	1	1	2
Meningocoele, cephalic	...	0	1	1
Monster	...	2	0	2
Pneumonia	...	1	2	3
Precipitate labour	...	3	0	3
Prematurity	...	36	35	71
Scleroderma Neonatorum		5	1	6
Shock	...	1	0	1
Syphilis, Congenital	...	8	2	10
Toxaemia of mother	...	1	0	1
Tuberculosis	...	1	0	1
Volvulus	...	1	0	1
Total		87	53	140

Maternal Deaths

		Clinic	Direct	Total
Ante-Partum Haemorrhage		2	0	2
Haemorrhage; shock	...	0	1	1
Placenta praevia	...	1	2	3
Post-partum eclampsia	...	0	1	1
Ruptured uterus	...	0	1	1
Extra uterine pregnancy	...	1	0	1

Operations

	Clinic	Direct	Total
Caesarian sections ...	37	4	41
Decapitation ...	0	1	1
Embryotomy ...	0	1	1
Evacuation of scalp heamatoema ...	1	0	1
Evacuation of vulval heamatoema ...	3	0	3
Evacuation of Uterus ...	1	0	1
Flushing and Currettage	1	0	1
Forceps ...	13	4	17
Internal version ...	2	0	2
Laparotomy ...	1	0	1
Manual removal of placenta	2	1	3
Perforation & craniotomy	3	4	7
Repair to circumcision ...	1	0	1
Repair to perineum ...	1	0	1
Replacement of uterus ...	1	0	1
Rupture of Membranes ...	4	0	4
Surgical induction ...	8	1	9

Clinics

Ante-Natal : No. Held — 204.

New Cases — Resident ...	1,761
„ „ — Non-Resident	2,665
Repeats — Resident ...	3,085
„ — Non-Resident ...	3,736
Total ...	11,247

Post-Natal : No. Held — 48.

Resident ...	427
Non-Resident ...	259
Total ...	686

Total Abnormal cases treated — 470.

Section 17

VENEREAL DISEASES CLINIC

The number of new cases attending the Clinic has decreased from 3,684 in 1949 to 2,883 in 1951. It is not possible to give a definite reason for this. The average attendance at Clinics was 92 showing an increase of 6 per clinic on the 1950 figure.

Syphilis. The number of cases of syphilis shows a further 5% decrease on the 1950 figure making a 24% decrease on the 1949 figure. It would be pleasing if one could assume that this was due to a decreased incidence of syphilis amongst African women. Such a conclusion at this stage and with so many other factors to take into account is not justifiable. It may be of some significance, however, as indicating a growing awareness of the advisability to get early treatment, that the proportion of attendances of cases with early syphilis to advanced syphilis has decreased :—

	1947	1948	1949	1950	1951
Early Cases ...	542	595	728	551	518
Advanced ...	825	659	536	443	314

The use of a “single shot” dose of 1.2 mega. units of penicillin as the routine treatment for syphilis was begun in May 1951. Pregnant and lactating women are given, in addition, arsenical and bismuth treatment. Patients become rapidly non-infective when given the “single shot” dose. It is hoped that during 1952 it will be possible to follow up a sufficient number of these patients to be able to produce some interesting statistics.

Gonorrhoea. The number of cases showed a decline of 27% in 1950. Until this year the number of cases has been increasing year by year since 1947 (528 cases). The number of consultations by patients with gonorrhoea has dropped from 8 to 7 in 1950 to 5 this year, another indication of the difficulty in persuading patients to return to the Clinic for follow up.

Pregnant Women. There was a 26% drop in the number examined compared with 1950 while 4% less were found to be infected. Comparative figures since 1947 are shown :—

	1947	1948	1949	1950	1951
No. Examined ...	1,949	1,615	1,525	1,683	1,247
No. Infected ...	32%	36%	40%	64%	60%

Analysis of the 3,396 Patients who attended the V.D. Clinic in 1951

1. Completed treatment and follow up	Syphilis ...	3	
	Gonorrhoea ...	240	
(With syphilis follow up is for 2 years and with gonorrhoea 6 weeks)		<hr/> 243	243
2. Completed treatment but have not reported for follow up	Syphilis ...	66	66
3. Continuing treatment or follow up at end of 1951	Syphilis ...	246	
	Gonorrhoea ...	76	
(27 of these syphilitic cases had completed treatment at end of 1951)	Yaws ...	1	
	Others not V.D.	84	
		<hr/> 407	407
4. Patients not V.D. who completed treatment	...	627	627
5. Defaulters who did not complete treatment	Syphilis ...	678	
	Gonorrhoea ...	564	
	Yaws ...	1	
	Others not V.D.	479	
		<hr/> 1,722	1,722
6. Patients reinfected and re-admitted in 1951	Syphilis ...	10	
	Gonorrhoea ...	318	
	Others not V.D.	3	
		<hr/> 331	331
			<hr/> 3,396

General. It is extremely difficult to convince patients of the necessity for prolonged "follow up" with syphilis and gonorrhoea and this is the greatest difficulty in work with venereal diseases.

It is considered advisable that syphilitic patients should attend the Clinic for follow up for a period of two years after the completion of their treatment; in the case of gonorrhoea the follow up period is six weeks. The Clinic endeavours to persuade patients of the necessity for attending during the follow up period even after the necessary treatment has been completed.

It is disappointing, if not surprising, that only three syphilitic patients during the year had completed the two-year follow up period and only 240 the period for patients with gonorrhoea.

The instability of the Nairobi African population and especially the female population accounts for this to a large extent. Many return to the reserves and are unable to return to the Clinic. It is, however, felt that the most important reason for this lack of co-operation is lack of understanding. Witness the 1,722 patients who did not even complete their injection treatment. The "Single shot" penicillin treatment will result in a large reduction in these figures in future.

As far as possible defaulters are visited in their homes if they have given Nairobi addresses. 1,202 visits were paid to 560 such patients and 300 were persuaded to continue treatment. This under the circumstances

is a good return and says much for the African staff of the Clinic who visit the patients. There is room for much improvement but the educative process is a slow one.

Payment for Treatment. The Council's policy of charging non-residents of Nairobi for treatment of venereal diseases has continued. Twenty shillings is charged for 1.2 mega units of penicillin which costs Council six shillings approximately; seven shillings is charged for 40 tablets of one of the "sulpha" drugs; the cost to Council is 1/60 approximately. It is a general human weakness not to appreciate anything given free and, consequently, it is not suggested that the practice of charging should be abandoned although it is International Health Policy to give free treatment for V.D. To the African the fees charged represent a large sum, no moral deterrent but also, if they are unable to pay, no treatment; the consequence is spreading of the disease.

It is suggested that the problems would be better and more equitably answered by levying a fee of, say, 50 cents from every patient on her first visit and by making a scale of charges for any treatment which would be necessary. Patients living outside Nairobi could be charged a higher fee. It is felt that this will lead to less hardship, an increased number of patients from the group which has now to pay, and a greater appreciation of the services given.

TABLE 41

New Cases Examined at the V.D. Clinic

	1949				1950				1951			
	Sy.	Gc.	Y.	Neg.	Sy.	Gc.	Y.	Neg.	Sy.	Gc.	Neg.	Y.
January	146	51	2	206	96	143	—	82	83	89	91	—
February	104	64	1	159	79	178	1	71	74	82	70	—
March	120	56	—	173	97	215	2	89	70	95	72	—
April	97	53	2	130	66	118	—	81	71	95	84	—
May	111	75	3	128	72	106	—	129	66	140	91	1
June	86	99	—	150	79	154	—	156	57	97	72	—
July	128	84	—	136	55	143	—	135	47	123	104	—
August	65	79	1	99	51	53	—	86	46	109	135	1
September	74	74	—	119	56	47	—	158	57	84	93	—
October	72	80	1	95	84	103	—	107	58	68	77	—
November	81	123	—	104	90	144	1	84	57	43	120	—
December	62	123	—	68	70	103	—	110	25	28	98	—
Totals	1146	961	10	1567	895	1507	4	1288	711	1053	1117	2
Total New	3684				3694				2883			

Work at Pumwani V.D. Clinic during 1951**1. Attendances**

	1950	1951
Number of consultations ...	21,658	23,141
Number of afternoon treatments ...	1,056	1,565
Total attendances for the year ...	22,714	24,706
Number of Clinics ...	251	251
Average per Clinic ...	86	92
Increase on 1950 average attendances was 6%.		

2. **Consultations**

				1950	1951
By patients with syphilis	...	...	...	10,455	11,692
By patients with gonorrhoea	...	...	...	7,260	6,695
By patients with yaws	...	...	...	40	34
<hr/>					
Total by patients with V.D.	...	...	...	17,757	18,421
By other patients not V.D.	...	...	...	3,901	4,720
<hr/>					
Total consultations	...	...	...	21,658	23,141

3. **Analysis of Cases**

					1950	1951
Primary syphilis	...	...	...	...	88	101
Secondary syphilis	...	...	...	...	463	417
<hr/>						
Total acute syphilis	...	...	...	...	551	518
Latent syphilis	...	...	...	...	442	314
Tertiary syphilis	...	...	...	...	1	—
Congenital syphilis	...	...	...	...	167	172
<hr/>						
Total syphilis	...	...	...	...	1,161	1,004
Gonorrhoea	...	...	...	...	1,620	1,190
Yaws	...	...	...	...	1	3
<hr/>						
Total V.D.	...	...	...	...	2,782	2,187
Other Cases	...	...	...	...	1,240	1,199
<hr/>						
Total Cases	...	...	...	...	4,022	3,396

4. **Injections given**

					1950	1951
Intravenousare	...	...	...	...	5,025	5,359
Intramuscular	...	...	...	...	4,640	6,220
<hr/>						
Penicillin	...	...	...	...	11,008	12,972

5. **Specimens taken for Laboratory Tests**(a) **Specimens for Kahn test**

Total	Positive	Doubtful	Negative
5,299	1,340	506	3,463

(b) Smears for Gonococcal examination

Smears from urethia	6,634	number positive	16
„ „ cervix	6,548	„ „	300
„ „ vagina	76	„ „	5
„ „ eye	483	„ „	31
Total smears taken		Total positive	356

6. Home visits to V.D. Patients

The number of visits paid to these patients was 1,202.

The patient was contacted on 685 visits and there were 300 return visits to the clinic after the patient had been contacted.

7. Examination of Ayahs sent by their employers or by Central Registration Office

The number referred for examination was	...	233
Those found to be negative were	...	120
Those found to be infected were	...	113

Total V.D. — 113

8. Examination of Pregnant Women

The number examined was	...	1,247
Those found to be negative were	...	488
Those found to be infected were	...	759

Total V.D. — 759

Section 18

STAFF CLINIC AND INOCULATION CENTRE**Staff Clinic**

The staff clinic continues to serve a very useful purpose, principally for the Africans employed by Council. The figures below which give an idea of the work carried out during the year refer only to African employees. It must be emphasised that the clinic is not intended for the use of African employees only and it is felt that the European and Asian staff could make much greater use of the facilities provided. Major treatments cannot be done, but drugs can be obtained from and minor treatment given at, the clinic.

Total New Cases ...	5,575	)	Fit ...	15,783
Total Attendances	22,128	)	Unfit ...	6,343

Complaint	No. of Cases	% New Cases
Respiratory	1,784	32
Wounds, septic sores	1,441	25
Abdominal	525	9
Undiagnosed fever and chronic malaria ...	299	6
Influenza	286	5
Parasites	183	3
Eyes	140	2

Respiratory diseases, as in previous years, continue to head the list of complaints. From the monthly returns, (not quoted here), it can be seen that there is a distinct seasonal increase in the incidence of respiratory diseases — the rise showing towards and immediately after, the end of the rainy seasons. It is possible that this high rate of respiratory infections could be reduced if employees were issued with rainproof clothing. The cost and other difficulties make the achievement of this almost prohibitive, but it is felt that if this were done there would be considerable saving in man power to the Council.

The number of wounds and septic sores which will require treatment at the clinic may be reduced next year since the departments in which most of these occur have been issued with first aid outfits which should enable many wounds to be treated satisfactorily on the spot.

Of the influenza cases, 285 occurred in a small epidemic which lasted from March until July.

The following table gives an interesting comparison between departmental employees and proportionate illness :—

Figures showing relationship between Departments and Illnesses

Approximate number of Africans in daily employment by Council—2,860.

Department	No. Employed	% Total Employees	% Total Illness
Roads	710	25	30
Parks	398	14	14
Cleansing	219	8	4
Scavenging	259	9	9
Other Public Health ...	318	12	13
Water	116	4	4
Garage	129	5	5
Infectious Diseases ...	127	5	3

93 patients or 1.6% of total new cases were sent to hospital.

Inoculation Centre

The most noticeable feature is yet another increase in the number of T.A.B. injections given. The remarks made about this in the annual report for 1950 were followed up and resulted in a short article which was published in the East African Medical Journal and which is reprinted on page 93.

TABLE 42

Inoculations and Vaccinations, 1951

	Europeans	Asians	Africans	Total
Smallpox	3,464	7,653	2,545	13,662
Yellow Fever	3,562	7,152	669	11,383
T.A.B.	975	3,067	46,690	50,732
Cholera	157	1,094	12	1,263
Diphtheria	191	34	3	228
Diphtheria/Whooping Cough ...	48	11	—	59
Whooping Cough	15	19	—	34
Tetanus	2	—	4	6
Plague	10	2	2	14
Typhus	2	2	—	4
Totals	8,426	19,034	49,925	76,594

Great inconvenience is caused to the clinic staff in two ways. Firstly, the public makes incessant demands for vaccination or inoculation outside clinic hours; these demands are made either because travellers have discovered that they have “left it too late” or because they have not made enquiries beforehand about inoculation hours. While the staff endeavours to be as accommodating as possible it is felt that the weekly publicity given in the press about inoculation requirements when travelling and the times when these can be obtained should be adequate information for the public.

The second inconvenience is caused by the issuing of certificates which are not valid internationally. Specific international regulations about this are laid down and it would save travellers untold trouble and often considerable delay if these regulations were adhered to.

“DAWA YA SINDANO”

(Reprinted from the East African Medical Journal, November, 1951)

Out of a total of 67,969 inoculations carried out at the Inoculation Centre at the Town Hall in 1950, 43,364 were given to Africans and of these 40,041 were T.A.B. The estimated African population of Nairobi in that year was 70,000. These are startling figures.

Even in a community where risk of enteric fever is great (and it is small here) and the public conscience regarding protection very alive, one would hardly expect over fifty per cent. of the entire population to be re-inoculated every year for protection against this disease.

It is not exactly a pleasant process, since, some years ago, it was discovered that less than twenty-five per cent. of Africans who received the usual first inoculation of .5 c.c. bothered to come back for their second dose and with some trepidation, a single dose of .75 c.c. was introduced. This somewhat heroic dosage caused little complaint and has been retained ever since. Why then is the African so avid in seeking this service? At a guess, one would say that less than two or three per cent. actually associate an inoculation with protection from typhoid, paratyphoid “A” and “B”. Why do the others attend? To answer this question, a number of Africans were questioned individually and the results were as follows:—

- 290 Malaria. Pain all over. Pains in chest, in legs, in back. Shivering and Cold.
- 25 Cough.
- 37 Itching and skin disease.
 - 1 Elephantiasis.
 - 2 Coughing blood.
 - 4 Vomiting.
 - 6 For safari.
 - 6 For the good of my health.
 - 1 To keep my health up-to-date.
 - 2 Bleeding.
 - 9 Wounds.
 - 2 Tapeworms.
 - 1 Rheumatism.
 - 1 Glands in groin.
 - 5 For stomach-ache.
- 64 Don't know.
 - 7 My husband told me to.
- 46 Because other people have it.
 - 1 **To prevent Typhoid** (A clerk).

The majority imagine it a kind of panacea as well as a specific against all the manifestations of malaria, even mosquito bites. Every tribe in Kenya was represented as well as several from Uganda and Tanganyika and numbers had travelled from Mombasa and up-country to receive this boon.

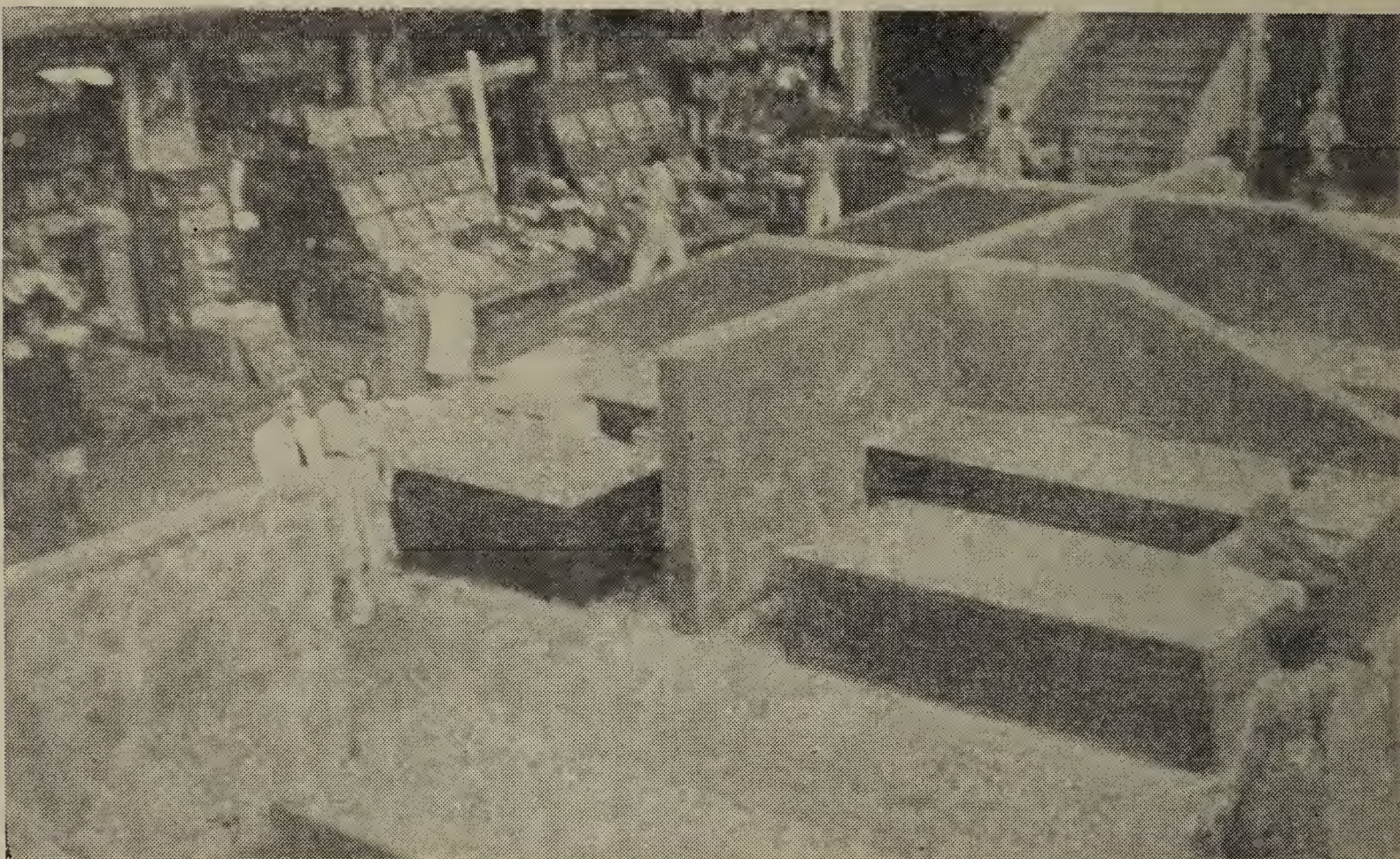
Some days after this investigation, numbers tended to increase and it was rumoured we were inquiring into each individual disease, as we had a separate and sovereign remedy for each human ailment.

Now the situation which this table shows is no indication at all for our discontinuing or cutting down inoculations to all comers. After all, in a city where

the sanitary arrangements have not yet reached western perfection, a high immunity amongst the Africans, many of whom are domestics, is an invaluable insurance against the epidemic.

The interesting side of the picture is that thousands of Africans seek an injection for some real or fancied disease or ailment that has nothing to do with typhoid. The fact that they sometimes report cured and, continue to seek this treatment, suggests that an injection of .75 c.c. of T.A.B. and its consequent reaction seems to do some good. Can it be that the short period of pyrexia which this provokes, acts as a general stimulant of the individual's antibodies and cures a number of minor infections? The theory seems at least superficially feasible and might be worth investigating.

MUNICIPAL MARKET
Central Stalls built in 1951



Section 19**MUNICIPAL MARKET SADLER STREET**

The past year has been satisfactory in some respects and unsatisfactory in others.

During the year alterations were made to the wholesale yard which it was hoped would to some extent solve congestion and enable Council to control the people who use it. Unfortunately this has not come about because even greater numbers of petty traders now sell there, and wholesale growers are forced to unload outside the market in the car park. In addition there are a large number of "spiv" type Africans who deliberately disobey all instructions, but who are able to defeat all efforts to dislodge them since they are in possession of residents' permits.

Discipline inside the market has improved, though some stallholders do not co-operate well. Convictions against tenants have also been far too numerous under price control regulations.

The erection of fourteen new stalls for African vegetable traders which are situated immediately behind the main hall has provided a certain amount of healthy competition and has also considerably assisted buyers in obtaining quick service during the rush periods.

Better facilities for unpacking and unloading all kinds of goods at the market are required. There is also a great need for a place for the cleaning of fish, eggs and for the trimming of vegetables and flowers. Box storage should also be provided as congestion by all the above activities prevents a state of orderliness and that high degree of hygiene which should always be present in a public market.

The financial side of the market in regard to money obtained as commission paid in the wholesale yard has been satisfactory compared with previous years. The estimated revenue for 1951 was Shs. 16,000/- whilst Shs. 58,000/- were actually obtained. The present method of getting commission is, however, inefficient and it is known that if it were possible to exercise complete and proper control over those who sell at the market, Council would enjoy an even greater increase in revenue than has already been obtained.

Section 20

BUILDING

(from the Annual Report of the City Engineer)

1. **European Housing**

- (a) **Woodley II.** The final phase of this development was completed in the year and consisted of 14 two-bedroom and 4 three-bedroom houses, giving a total for Woodley II of 50 two-bedroom houses and 20 three-bedroom houses.
- (b) **Woodley III.** Work on this new extension to the Estate comprising 10 two-bedroom and 20 three-bedroom houses together with 2 blocks of one bed-room flats (8 flats in each block) was started in the latter half of the year.
- (c) **Woodley Estate.** The construction of a European Day Nursery, with Matron's Flat, a General Store with a flat over, was started late in the year.

2. **African Maternity Hospital, Pumwani**

Work on this new 71 bed Maternity Hospital and Sisters' Mess started early in the year and, but for the late arrival of certain items ordered from the United Kingdom, would have been finished before the close of the year.

3. **African Housing**

- (a) **Gorofani III.** The contract for this extension to the Gorofani African Housing Scheme was let in the second half of the year and comprised 15 two-storey blocks of 20 pairs of two-room family dwellings, giving a total accommodation for 960 persons.
- (b) **Bahati II (Extension).** Consisting of 6 four-room blocks, to accommodate 72 persons in all, was started late in the year.
- (c) **Bahati III.** This development started at the same time as the Bahati II Extension, and comprises 50 eight-room blocks and when completed will accommodate a further 1,200 persons.
- (d) **African Built.** A further 4 dwellings have been built under this scheme, bringing the total to date up to 8 dwellings including the "prototype" erected by the City Council.
- (e) **African Staff Housing.** 2 six-room blocks of African quarters at the Sewage Works to accommodate 36 persons were completed before the end of the year.

4. **Asian Clinic, Fourth Street, Eastleigh**

Work was started in November and by the end of the year was approximately 25% complete.

5. **Unauthorised Buildings and Signs**

334 unauthorised buildings and 1,191 unauthorised signs were removed.

Section 21

SCHEDULE OF STAFF

POST	NAME OF OFFICER	Established Non-Established Temporary
Medical Officer of Health ...	A. T. G. Thomas, M.D., B.S., D.P.H.	E.
Deputy M.O.H. ...	J. M. D. Roberts, M.B., B.S., M.R.C.S., L.R.C.P. (Until June 1951)	T.
	J. W. McAllan, M.B., Ch.B., D.P.H. (from June 1951)	E.
Assistant Medical Officer ... (Staff & Inoculation Clinic)	A. Cruickshank, O.B.E., M.D., Ch.B. (until October 1951)	T.
	F. S. Gillespie, M.D., B.Ch., B.A.O., (from November 1951)	T.
Senior Sanitary Inspector ...	Mr. R. C. Forster, M.B.E., Cert. R.S.I. & Meat Cert. San. Sc.	E.
Sanitary Inspectors ...	Mr. D. Mackintosh, Cert. R.S.A.S.	E.
	Mr. S. White, Cert. R.S.I.	E.
	Mr. P. Cairns, Cert. R.S.I.	E.
	Mr. A. Ramshaw, Cert. R.S.I. and Meat	E.
	Mr. H. T. Beechey, Cert. R.S.I. & Meat. Dip : R.I.P.H.H. (Hons.)	E.
	Mr. P. H. Burge, Cert. R.S.I. & Meat Cert. San. Sc. Cert. Trop. Hy., A.M. Cert. I.S.E.	E.
	Mr. K. E. Kendray, Cert. R.S.I. & Meat	E.
	Mr. R. D. Beisare, Cert. R.S.I. (India) & Meat Cert. (Eng.)	E.
Afr. Sanitary Inspectors	Mr. Mohd. Din, Cert. R.S.I. (India)	E.
	P. Pascal Ongalo, Cert. R.S.I. (E.A.) (resigned September)	E.
	Joseph Tsonzaka, Cert. R.S.I. (E.A.)	E.
	Nahashon Mimano, Cert. R.S.I. (E.A.)	E.
	Thomas Mboya, Cert. R.S.I. (E.A.)	E.
Stenographer ...	Mrs. I. Symonds	E.
Clerk/Typist ...	Mrs. D. I. Butcher	N.E.
Sister/Storekeeper ...	Mrs. E. M. Sullivan, S.R.N.	E.
Cleansing Department :		
Cleansing Superintendent	Mr. R. A. McDonell, M.Inst.P.C.	E.
Deputy „	Mr. C. L. Eager, A.Inst., P.C.	E.
Foreman ...	Mr. T. N. Pienaar	E.
	Mr. A. Savy	E.
	Mr. M. Esparon	N.E.
	Mr. G. W. Hatton	N.E.
	Mr. M. A. Rene	T.
	Mr. L. H. Clough	E.
Clerk/Typists ...	Mrs. M. Trowsdale	E.
	Miss W. van Rosi	T.
Infectious Diseases Control Department :		
Chief Mosquito Inspector	Mr. J. Morrill	E.
Mosquito Inspectors ...	Mr. E. P. Swan (until November 1951)	E.
	Mr. E. P. Aspinall	T.
	Mr. M. I. Shah	E.
	Mr. Y. Ahmedi	E.
	Mr. A. Karmali Suliman	E.
Clerk/Typist ...	Mrs. J. Dodd, S.R.N., S.C.M., H.V. Cert.	T.

POST	NAME OF OFFICER	Established Non-Established Temporary
European Child Welfare :		
Medical Officer	Dr. P. Gaffikin, M.B., Ch.B.	E.
Matron	Miss I. Watson, Princess Louise Children's Nurse	E.
Assistants	Mrs. Hill	T.
	Mrs. Salmon	T.
	Mrs. Pelling	T.
	Mrs. Simpson	T.
Health Visitor, European H.V. Service (from April, 1951)	Mrs. P. Graham, S.R.N.	E.
African Child Welfare :		
Medical Officer	Dr. Henry, M.B.E., M.B., Ch.B., D.T.M. & H.	E.
Sup. Health Visitors	Mrs. E. T. Dugmore, S.R.N., S.C.M.	E.
Health Visitors	Mrs. A. G. Gibb, S.C.M.	E.
	Mrs. B. Brooks, S.R.N., S.C.M.	E.
	Mrs. Davis, S.R.N., S.C.M., H.V. Cert.	E.
	Mrs. Pickwell, S.R.N., S.C.M.	E.
Afr. Health Visitor	Marion Wanzila	E.
Indian Maternity and Child Welfare :		
Medical Officer	Dr. P. Gaffikin, M.B., Ch.B.	E.
Sup. Health Visitors	Miss Benjamin, P.C.M.B., H.V. Cert. (Delhi)	E.
Health Visitors	Mrs. Chadda, H.V. (Lahore)	E.
	Miss de Mello, S.R.N., S.C.M.	E.
	Mrs. Pachecos, S.R.N. (Karachi)	E.
	Mrs. Nayer	E.
	Miss Ramzan	E.
	Miss N. Kaur	T.
	Miss M. K. B. Singh	T.
	Miss I. K. G. Singh	T.
	Miss R. R. Varma	T.
	Miss Jaswant Singh	T.
	Miss A. Rashid	T.
	Mrs. Chudgar	T.
	Mrs. S. K. K. Krishin Pallan	T.
V.D. Clinic :		
Medical Officer	Dr. L. O. Hunter, M.R.C.S. (Eng.) L.R.C.P. (London)	E.
European Sisters	Mrs. V. Hook, S.R.N., S.C.M.	E.
	Mrs. M. K. Adams, S.R.N., S.C.M., H.V. Cert.	T.
Lady Grigg Maternity Hospital :		
Med. Superintendent	Dr. Betty Darling, F.R.C.S.	T.
Matron	Miss K. Foord, S.R.N., S.C.M.	E.
European Sisters	Miss Pippett, S.R.N., S.C.M.	E.
	Mrs. Harper, S.R.N., S.C.M., (until June 1951)	E.
	Miss J. P. Koppert, S.R.N.	E.
	Miss F. E. A. Greening, S.R.N., S.C.M. (from July 1951)	E.
	Miss M. H. Dicks, S.R.N., S.C.M. (from November 1951)	E.

	Miss E. M. Sanctuary, S.R.N., S.C.M.	
	(from November 1951)	N.E.
Welfare Worker	... Mrs. M. E. Sidney, S.R.N., S.C.M.	
	(until March 1951)	N.E.

Municipal Market :

Market Master	...	Mr. S. W. Sprague
Clerk/Accountant	..	Mr. M. A. Khan
		Mr. A. Butt

Section 22

REVENUE ACCOUNT FOR THE YEAR

PUBLIC HEALTH

EXPENDITURE

	£	s.	cts.	£	s.	cts.
Public Health Administration :						
Salaries	11,898	17	20			
Cost of Living Allowances	1,406	5	46			
Superannuation Fund Contributions	1,180	3	40			
Provident Fund Contributions	75	14	63			
Wages, etc. : African Staff	525	16	30			
Uniforms	65	5	24			
Locomotion	512	8	38			
Medical Attention — Staff	17	8	00			
Rent of Offices	1,219	8	04			
Printing, Stationery and Advertising	413	0	82			
Telephones	159	16	35			
Postages	183	13	20			
Passages — new appointments	275	8	25			
Food and Drug Analysis	237	2	70			
Public Health Propaganda	204	6	79			
Demolition of Buildings	534	17	87			
Miscellaneous	5	14	48			
Administration Expenses	1,450	0	00			
	20,365	7	11			
Less : charged to Cleansing Dept., Clinic and Inoc. Centre	565	0	00	19,800	7	11
Infectious Diseases Prevention :						
Salaries	3,218	10	04			
Cost of Living Allowances	496	1	70			
Superannuation Fund Contributions	119	19	61			
Provident Fund Contributions	75	13	56			
Wages & Uniforms, etc. : African Staff	7,653	17	73			
Locomotion	540	8	89			
Medical Attention — Staff	15	00				
Transport — General	2,102	19	41			
Transport — T.I.F.A. Unit	39	13	67			
Stores	4,026	14	76			
Laboratory Equipment	34	14	37			
Printing, Stationery and Advertising	604	0	49			
Rent of Store	25	0	00			
Hospital Fees	2,710	15	35			
Notification Fees	174	4	95			
Miscellaneous	6	00				
Mobile Disinfestation Unit — Purchase	1,205	11	00			
	23,029	6	53			
Carried/Forward	42,829	13	64			

ENDED 31st DECEMBER, 1951.
SERVICES

INCOME

				£	s. cts.	£	s. cts.
Public Health Administration :							
Government Grant 1951	...	...	...	35,600	0 00		
Food and Drug Analysis	...	...	...	217	7 82		
Sundry Income	...	...	...	5	10 00		
						35,822	17 82
Infectious Diseases Prevention :							
Vermin Destruction	...	...	..	1,595	1 00		
Rodent Destruction	...	...	...	118	17 40		
Malaria Control — Kiambu L.N.C.			...	200	0 00		
Malaria Control — Contribution towards research	...	...	...	400	0 00		
						2,313	18 40

Carried/Forward ...

38,136 16 22

EXPENDITURE

	£	s.	cts.	£	s.	cts.
Brought/forward ...				42,829	13	64
Staff Clinic and Inoculation Centre :						
Salaries	1,472	15	39			
Cost of Living Allowances	224	10	57			
Provident Fund Contributions	29	14	00			
Wages, etc. : African Staff	409	7	56			
Uniforms	28	6	49			
Medical Stores	530	5	98			
Rent of Offices	285	0	00			
Electricity	53	1	95			
Printing, Stationery and Advertising	12	1	16			
Miscellaneous	10	9	02			
Administration Expenses	115	0	00			
				3,170	12	12
Venereal Diseases Treatment :						
Salaries	2,132	9	86			
Cost of Living Allowances	283	14	93			
Superannuation Fund Contributions ..	41	12	20			
Provident Fund Contributions	91	9	25			
Wages, etc. : African Staff	626	0	65			
Uniforms	39	13	08			
Locomotion	17	10	34			
Medical Attention — Staff	16	8	85			
Maintenance of Buildings	112	13	82			
Medical Stores and Equipment	833	1	11			
Electricity	62	18	95			
Water and Conservancy	21	4	40			
Printing, Stationery and Advertising	39	5	49			
Telephones	34	18	40			
Miscellaneous	1	10	38			
Maternity and Child Welfare :				4,354	11	51
Parklands Day Nursery —						
Salaries	1,546	19	33			
Cost of Living Allowances	289	11	11			
Superannuation Fund Contributions ...	43	0	76			
Wages, etc. : African Staff	170	19	39			
Uniforms	21	19	80			
Provisions	541	18	62			
Maintenance of Buildings	146	4	83			
Maintenance of Equipment	99	9	52			
Electricity and Fuel	70	0	88			
Water and Conservancy	21	17	16			
Rates	105	3	75			
Insurance	3	7	50			
Printing, Stationery and Advertising ..	7	14	79			
Telephone	18	13	58			
Miscellaneous	8	11	31			
Renewals Reserve Contribution	75	0	00			
Refrigerator	87	17	00			
Electric Cooker	54	6	63			
Loan Charges	261	2	41			
				3,573	18	42
Carried/forward ...				53,928	15	69

[illegible]

EXPENDITURE

	£	s.	cts.	£	s.	cts.
Brought/forward ...				53,928	15	69
Maternity and Child Welfare — (Continued) :						
Woodley Day Nursery —						
Loan Charges				316	4	33
European Child Welfare Clinics :						
Salaries	214	4	45			
Purchase of Infant Food	63	12	70			
Medical Stores	101	0	75			
Miscellaneous	12	2	42			
Loan Charges	50	0	00			
				441	0	32
European Health Visiting Service :						
Salaries	458	9	94			
Cost of Living Allowances	56	5	00			
Provident Fund Contributions	26	17	75			
Uniforms	3	3	47			
Locomotion	106	10	70			
				551	6	86
Asian Child Welfare Clinics :						
Salaries	3,582	14	39			
Cost of Living Allowances	638	16	86			
Superannuation Fund Contributions	105	10	14			
Provident Fund Contributions	129	18	03			
Wages, etc. : African Staff	248	15	29			
Uniforms	131	14	58			
Locomotion and Transport	440	2	85			
Medical Attention — Staff	17	8	10			
Maintenance of Buildings	65	19	98			
Maintenance of Furniture & Equipment	78	19	42			
Medical Stores	111	18	30			
Cleaning Materials	38	5	69			
Electricity	117	15	10			
Water and Conservancy	47	16	40			
Rates	178	10	00			
Insurance	2	2	75			
Printing, Stationery and Advertising	157	9	15			
Midwives' and Health Visitors' Training	17	11	30			
Miscellaneous	8	63				
Renewals Reserve Contribution	50	0	00			
Loan Charges	305	8	85	6,467	5	81
Carried/forward ...				61,704	13	01

[illegible]

EXPENDITURE

	£	s.	cts.	£	s.	cts.
Brought/forward ...				61,704	13	01
Maternity and Child Welfare — (Continued) :						
African Child Welfare Clinics —						
Salaries	4,152	14	08			
Cost of Living Allowances	—	—	—			
Provident Fund Contributions	251	12	44			
Wages, etc. : African Staff	1,464	9	12			
Uniforms	40	3	91			
Locomotion and Transport	480	14	18			
Medical Attention — Staff	15	6	10			
Maintenance of Buildings	120	5	46			
Maintenance of Furniture & Equipment	68	15	00			
New Furniture and Equipment	11	15	75			
Medical Stores	811	3	31			
Cleaning Materials	60	5	97			
Electricity	133	3	05			
Water and Conservancy	49	17	76			
Rent	71	10	00			
Rates	39	6	25			
Insurance	3	2	52			
Printing, Stationery and Advertising	163	8	55			
Telephone	68	17	45			
Christmas Parties	20	0	00			
Miscellaneous		6	25			
Loan Charges	45	15	43			
African Maternity Hospital —				8,605	2	43
Salaries	3,536	13	28			
Cost of Living Allowances	504	12	33			
Superannuation Fund Contributions	64	1	93			
Provident Fund Contributions	97	11	56			
Locum and Anaesthetists' Fees	25	0	00			
Wages, etc. : African Staff (Domestic) ..	602	8	93			
Wages, etc. : Nursing Staff	1,053	14	73			
Uniforms	167	9	23			
Locomotion and Travelling	561	1	67			
Medical Attention — Staff	8	7	50			
Maintenance of Buildings	236	17	67			
Maintenance of Furniture & Equipment ..	88	5	62			
Linen and Cutlery	243	3	33			
Medical Stores	977	9	20			
Cleaning Materials	189	5	03			
Electricity and Fuel	433	8	84			
Water and Conservancy	162	7	24			
Provisions	1,226	4	30			
Insurance	6	9	38			
Printing, Stationery and Advertising	86	1	58			
Telephone	41	7	99			
Passages — New Appointments	128	0	00			
Recreation and English Tuition	2	3	48			
Miscellaneous	2	9	00			
Renewals Reserve Contribution	500	0	00			
Loan Charges — Principal	279	1	16			
Interest	556	9	70			
Loans Fund Expenses	77	8	32			
				11,857	13	00
Carried/forward ...				82,167	8	44

INCOME

		£	s.	cts.	£	s.	cts.
Brought/forward	...				42,715	17	82
Maternity and Child Welfare — (Continued) :							
African Child Welfare Clinics —							
Fees	... ..				294	2	60
African Materntiy Hospital —							
Fees	... ..	2,470	8	75			
African Trust Fund — Grant	...	400	0	00			
Local Native Councils — Grants	...	93	0	00			
Trainees — Board	348	6	00			
					3,311	14	75

Carried/forward	...				46,321	15	17
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EXPENDITURE

			£	s.	cts.	£	s.	cts.
	Brought/forward	...				82,167	8	44
Ambulance :								
Wages — Driver	71	12	59			
Uniforms	...	...	15	11	04			
Maintenance of Equipment	...	...	15	7	50			
Motor Ambulance —								
Running Expenses	...	74 16 53						
Renewals Reserve Cont.		100 0 00	174	16	53	277	7	66
Anti-Malarial Works :								
Construction of Drains —								
Off Park Road	...	338 8 51						
Ngara Road	...	265 10 24						
Bishops Road	...	86 6 92						
Cross Road	...	245 8 20						
Diwan Road	...	276 15 37						
L.R. 209, Plot 1050	...	26 17 92	1,239	7	16			
Maintenance of Drains —								
Wages, etc. : Artisans	...	807 7 63						
Wages, etc. : African Staff	...	1,449 17 38						
Materials and Stores	...	207 14 32						
Transport	...	435 11 12				4,139	17	61
			2,900	10	45			
Funerals and Cemeteries :								
Funerals —								
Staff Allowances	...	593 15 00						
Cost of Coffins	...	1,773 3 25						
Lettering of Plates	...	36 13 50						
Telephones	...	17 13 36						
Miscellaneous	...	45 9 75						
Motor Hearse —								
Running Expenses	...	60 19 28						
Renewals Reserve								
Contribution	...	150 0 00						
			2,677	14	14			
Cemeteries —								
Artisans & African Staff	...	522 11 74						
Uniforms	...	21 3 83						
Stores & Transport	...	17 12 09						
Grave Numbering	...	64 1 39						
Water & Conservancy	...	18 3 96						
Administration expenses	...	565 0 00						
Forest Road Cemetery —								
Paths	...	10 3 23						
Loan Charges —								
Principal	...	6 11 90						
Interest	...	13 8 68						
Loans fund exp.	...	1 3 70						
			1,240	0	52	3,917	14	66
TOTAL						90,502	8	37

INCOME

				£	s. cts.	£	s. cts.
	Brought/forward	...	...	...		46,321	15 17
Ambulance :							
Hire Charges	...	...	...	...	...	372	7 00
Funerals and Cemeteries :							
Funeral Charges	3,937	11 15
Public Health Services :							
Net Expenditure :	£39,870.15.05.						

TOTAL	50,631	13 32
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